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ABSTRACT

The purpose of this investigation was to develop a method for improving the spelling skills of college freshmen. Parallel spelling units were devised, which covered the same minimal skills concepts. After a spelling pretest, the students in the sample could choose to study the material either by classroom drill or by using a self-instructional packet. All students took an identical posttest. Although the two groups showed no significant differences in their mean scores, the group that participated in the classroom drill raised their scores considerably higher than their pretest scores. The study recommends self-instructional packets for motivated students with high pretest scores and advocates classroom drill with emphasis on rules and the analysis of words for the majority of students. The pretest, posttest, and exercise materials used in the study are included, along with tables of statistical comparisons and analyses pertinent to the research. (MAI)

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SPELLING IMPROVEMENT UNITS TAUGHT BY CLASSROOM DRILL VS. SELF-INSTRUCTIONAL PACKAGE: THEIR DEVELOPMENT AND COMPARATIVE EVALUATION

CURRICULUM AND INSTRUCTIONAL DEVELOPMENT

CORE MODULE

by

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SPELLING IMPROVEMENT UNITS TAUGHT BY CLASSROOM DRILL VS. SELF-INSTRUCTIONAL PACKAGE: THEIR DEVELOPMENT AND COMPARATIVE EVALUATION

INTRODUCTION

The spelling skills of El Centro freshmen are often weak. This may be particularly true because El Centro is an open-door, inner-city campus, but it also seems to reflect national trends--especially at similar campuses.

"It's a universal truth that parents in particular and adults in general are hung up on spelling. The expectations they have for children's written skills are (a) usually not clearly defined, (b) sometimes understandable, and (c) never realistic. The businessman expects his secretary to spell phenomenally (sic), the personnel manager expects his applicants to spell supurbly (sic), the principal expects his teachers to spell exceptionaly (sic), and the teacher expects her students to spell recess and quiet and through and cough and their and there and they're."[1]

"There is plenty of evidence to show positive correlations between spelling accuracy and high intelligence, as may be seen in the studies done from 1926 (by Arthur Gates) to the present. But what about the student who isn't brilliant, one who is of average intelligence or below? How do you teach him to spell? After the elementary school has had at him, he will experience little additional spelling instruction.

[1]Mike Holmes, "A Spelling Lessen (sic)," English Journal, 64:8-9 (December, 1975).

Tests, yes, but little instruction."[2]

If a student in the lower grades doesn't fully comprehend a certain --for example, the to-too-two distinction, or the ie-ei distinction, or when to change y to i, etc.--then thereafter he will probably just guess whenever he must spell such a word. It would seem desirable to give him one more chance at spelling instruction, to straighten out his spelling confusions insofar as possible.

Geedy summarizes spelling research as follows: "Research indicates that what is done with spelling in connection with other language arts needs to be supplemented by direct systematic instruction in spelling, especially in the case of pupils of below average spelling ability.... Spelling continues to be an area where many children meet with failure. In general one-fourth of the children in any grade where spelling is taught, spell as well as the average in the grade above; one-half, no better than the average in the grade below." Geedy further reports on various approaches to teaching spelling (list of 3500 basic words, a linguistic approach, morphemic pronunciation approach, Initial Teaching Alphabet, tracing methods, reading contexts, etc.)[3] Perhaps significantly, not one method discussed makes use of any available spelling rules, or analytical application of such rules to figure out how to spell words.

Shaughnessy applies spelling research conclusions at the college level: "Of all the encoding skills, spelling tends to be viewed by teachers and students alike as the most arbitrary, the most resistant to

[2]G. Howard Poteet, "A Brief Note on Spelling," English Journal, 62:1029 (October, 1973).

[3]Patricia S. Geedy, "What Research Tells Us About Spelling," Elementary English, 52:233,235 (February, 1975).

instruction, and the least related to intelligence (a myth that has comforted many bad spellers). It is the one area of writing where English teachers themselves will admit ineptness. Outside the academy, however, the response to misspelling is less obliging. Indeed, the ability to spell is viewed by many as one of the marks of the educated person, and the failure of a college graduate to meet that minimal standard of advanced literacy is cause to question the quality of his education or even his intelligence....There are many more 'opportunities' for misspelling than for grammatical errors. Every word is a potential misspelling, whereas only certain words in each sentence can figure in grammatical errors.... And while the adult bad speller is probably never going to become an exceptionally good speller, the discovery that intelligent effort can reduce spelling errors significantly and that the domain of spelling is not quite as 'unruly' as it once appeared can generate a will to work on the problem."[4]

Shaughnessy later reemphasizes the "rules" of spelling: "Confusion dominates students' approaches to affixation. Aware that things often have to change when letters are added at the beginnings or ends of words, students are not prepared to make these changes deliberately....their unfamiliarity with the 'carpentry' of words keeps them from being able to apply some of the useful rules for affixation....Thus even in areas where English spelling is, for the most part, unambiguous and where the student could dramatically reduce his misspellings by learning to apply those rules, we find that little or no effort has been made to teach them."[5]

[4]Mina P. Shaughnessy, Errors and Expectations: A Guide for the Teacher of Basic Writing. (New York: Oxford University Press, 1977), pp. 161-163.

[5]Ibid., p. 171.

Spelling rules do seem to fill a need: "Spelling is almost the only area left to the authoritarians in all of us. The more language changes and the more successful linguists become in explaining, hence signifying, these changes, the more authoritarian longing reaches out for the clearly right, the permanent."[6]

The purpose of the present investigation, therefore, has been to explore methods of improving the basic spelling skills of El Centro freshmen. This needed to be planned as a concise unit within existing course frameworks, not created as a separate course (which would involve major curriculum revisions, and still probably would not attract those who need it most). Further, incoming El Centro students needing such remediation appear in a wide range of courses, "because the institution is a large inner-city community college which actively recruits ghetto/poor students."[7]

A spelling pretest was first administered to all students involved in the sample. Parallel spelling units were developed, each covering the same minimal skill-concepts. These skill-concepts included those few spelling "rules" in English which are reasonably consistent, and which a student might be expected to master and retain. One group of students studied this material by classroom drill while another group studied by a self-instructional package. All students then took an

[6]David Horne, executive editor of Yale Union Press, quoted by Mary Ritchie Key, "The English Spelling System and the ITA," The Elementary School Journal, and by Patricia S. Geedy, "What Research Tells Us About Spelling," Elementary English, 52:234 (February, 1975).

[7]John E. Roueche and R. Wade Kirk, Catching Up: Remedial Education (San Francisco: Jossey-Bass Publishers, 1973), p. 25.

identical post-test. Results were tabulated and statistically analyzed to discover if one group achieved significantly better results than the other, or if both methods were equally effective.

BACKGROUND AND SIGNIFICANCE

Robert C. Bennett, Chairman of El Centro's Communications Division, reports: "This fall semester, for the first time in El Centro's history, the Communications Division administered a writing sample to students who sought admission into our freshman composition course, English 101. ...The writing samples taught us many things about the entrance writing skills of our students. One particularly outstanding problem was spelling difficulty, particularly with frequently confused words such as 'to, too, and two' and 'no and know.'"[8]

A similar recognition of spelling problems was that of John A. Higgins, who analyzed sample placement themes written by incoming freshmen students under New York City's Open Admissions program. He found that the single most common fault was misspelling (excluding homonyms), which occurred in 83% of all papers and recurred (i.e. appeared two or more times) in 64%. The seventh most common fault was misspelling of a homonym, which occurred in 57% of all papers and recurred in 30%. Misspelling of homonyms, he later reported, was one of the areas in which the lower group fell furthest behind.[9]

The conclusions drawn by Dean Thomas Clark Pollock, from his study

[8]Robert C. Bennett, Chairman of Communications Division, El Centro College, October 11, 1976, letter, included as Appendix A.

[9]John A. Higgins, "Remedial Students' Needs vs. Emphases in Text-Workbooks," College Composition and Communication, 24:188-190 (May, 1973).

of 31,375 misspellings in the written work of college students, would still seem to hold true: He identified the hundred words most frequently misspelled, then the next 500 words most frequently misspelled. But of special interest are those among the first hundred, designated most misspelled of all:

belief	occasion	receive	separate	their	to
believe	precede	receiving	separation	there	too
existence	privilege	referring	similar	they're	two [10]
existent					

Nevertheless, El Centro is not currently solving the spelling problems of its students. An informal survey of the eight full-time English faculty members (writer excluded) disclosed little specific spelling instruction is included in English 101 at El Centro. Within compositions, misspellings are marked, and the student is then expected to correct these by using his dictionary. One instructor asks students to log their own misspellings. Another occasionally dictates frequently missed words; students exchange papers, check, then look up words missed. Another selects a half dozen words per reading for students to define and spell. Otherwise, no teaching of spelling was reported.

El Centro's President Ruby Herd recognizes the problem: "It seems to me that we could do with a little improvement in spelling skills. I am aware that many people have tried and not done too well with it. I have been an instructor, chairman of the Developmental Studies Division, dean of instruction and now president and have experienced student needs from all of those vantage points. Spelling has certainly been a problem

[10] Thomas Clark Pollock and William D. Baker, The University Spelling Book (Englewood Cliffs, New Jersey, 1955). Quoted in John C. Hodges and Mary E. Whitten, Harbrace College Handbook (New York, Harcourt Brace Jovanovich, Inc., 1972), pp. 176-177.

for many of our students....Prospective employers, four year colleges and universities that accept our transfer students and El Centro college itself are interested in improving spelling skills of our students."[11]

The present investigation of spelling instruction method seems clearly relevant to Nova's Curriculum and Instructional Development Module, as evidenced by the following statements in its syllabus:

"Meeting the needs of nontraditional students requires a reexamination of traditional teaching concepts and practices."[12]

"...a new instructional technology and an empirically based science of pedagogy are in the process of emerging....A research-based approach to instruction stressing student learning (a learning-oriented system of instruction) can be developed, implemented, and fully evaluated."[13]

"The underlying theme of this course is that superior and innovative instruction, in the sense of causing student learning, is the key to institutional identity for the two-year college. The 'systems approach' to instruction allows institutions and instructors to focus on and to meet the diverse needs of heterogeneous student bodies...This instructional system is based on the research and rationale developed by Benjamin S. Bloom and summarized in his paper 'Learning for Mastery.'"[14]

"The laudable goal of individualized instruction can become a reality through the incorporation of instructional materials which operationalize the systems approach to instruction. One means of adapting

[11]Ruby H. Herd, President, El Centro College, October 11, 1976, letter, included as Appendix B.

[12]Barton R. Herrscher, Dayton Y. Roberts, and John E. Roueche, Syllabus: Curriculum Development (Fort Lauderdale, Florida: Nova University Press, 1973), p. 9.

[13]Ibid., p. 3.

[14]Ibid., p. 4.

a course to the individual learning rates of students is to develop each unit of the course on an individualized instructional basis. These modules become self-contained instructional packages dealing with a small amount of subject matter which forms a conceptual whole, capable of 'standing alone.'

"A course so constructed permits individualized learning by enabling the student to proceed independently through each unit. The rate and intensity of study is controlled by the student himself. The units are portable so that the student can learn at the time and place of his choice."[15]

Bloom, on whose ideas this instructional system is based (see item #14, above), posits this attitude: "One may start with the...assumption that individual students may need very different types and qualities of instruction to achieve mastery. That is, the same content and objectives of instruction may be learned by different students as the result of very different types of instruction....There is evidence that some students learn quite well through independent study while others need highly structured teaching-learning situations (Congreve, 1965)."[16]

"The concept of whole class instruction has taken on negative connotations in an educational era which has embraced the notion of individualized instruction....The two concepts, whole class instruction and individualized instruction, are not, however, contradictory. If a whole class of twenty-five to thirty-five children has highly similar or identical

[15] Ibid., p. 13.

[16] Benjamin S. Bloom, J. T. Hastings, and G. F. Madaus, "Learning for Mastery," Handbook on the Formative and Summative Evaluation of Student Learning (New York: McGraw-Hill, 1971), p. 47.

needs, then whole class instruction is the most efficient and effective means of meeting the needs of each child. Some areas of the curriculum lend themselves extremely well to whole class instruction. Spelling is one of those areas."[17]

Thus, from this conceptual base, the present study evolved: to provide a systems approach to spelling improvement both for those students who "learn quite well through independent study" and for those who "need highly structured teaching-learning situations."[18]

PROCEDURE

The following procedural steps have been followed in this practicum:

I. A selection was made of specific spelling skill-concepts which a student might be expected to know/learn--yet which are frequently missed in student writing.

   A. As previously cited, because El Centro is "a large inner-city community college which actively recruits ghetto/poor students,"[19] and because in El Centro's writing sample, "one particularly outstanding problem was spelling difficulty, particularly with frequently confused words such as 'to, too, and two,'"[20] and because "misspelling of homonyms...was one of the areas in which the lower group fell furthest behind,"[21] a necessary inclusion

[17]Ronald W. Hinrichs, "An Old But Valid Procedure," Elementary English, 52:249 (February, 1975).

[18]Bloom, Hastings, and Madaus, p. 47.

[19]Roueche and Kirk, p. 25.

[20]Bennett, letter.

[21]Higgins, p. 190.

has therefore been a unit on discriminating and correctly spelling homonyms/homophones.[22]

"Homophones are words that sound the same but have different meanings and spellings....For Basic Writing students, they are a source of many errors--errors that experienced writers have generally learned to avoid early in their training, but that BW students have difficulty noticing and readers have difficulty overlooking. Unfortunately, they often involve words that are needed in sentences all the time."[23]

Rather than confuse and dilute the unit's impact by including too many homonyms/homophones, only the following were selected for study, as those in which errors are most common and most conspicuous: to/too/two, their/there/they're, your/you're, its/it's, than/then, and a/an.

B. As Shaughnessy further advises, "If possible start to work on misspellings that can be controlled by the application of rules. There are problems with rules, as everyone knows....Nonetheless, some rules, mainly those pertaining to affixation, work much of the time for most students, provided the rules are formulated clearly....Of the many rules that govern English spelling, at least four are worth learning:"[24] She then lists ie vs. ei, and the affixation of suffix when word ends with silent e, when

[22]Homonyms have the same sound and spelling but different meanings (i.e. too = also, too = excessive). Homophones have the same sound but different spellings and meanings (i.e. to/too/two).

[23]Shaughnessy, p. 169.

[24]Ibid., pp. 177-178.

word ends with y, and the rule for doubling a final consonant. "Rules such as these tend to distort the student's sense of the larger patterns in English spelling unless they are applied during practice to a broad range of words. That is, the student who works exclusively on the words that require a doubling of consonants or a change of y to i is in danger of missing the point that most words in English are unchanged by suffixes.... The unmistakable pattern in the language is not toward doubling nor dropping but simply adding. Ideally, exercises designed to give students practice in applying the rules will reflect this reality."[25]

Accordingly, the exercise materials of the present experiment may be seen to include a mixture of words to which the affixation rules may or may not apply, and the student must decide which is which: whether to adjust the spelling or merely to combine root and suffix.

A survey of teaching materials was made, to isolate those few spelling "rules" in English which are reasonably consistent, and which a student might be expected to master and retain to reduce frequent errors in writing. This included an examination of approximately fifty current textbooks, and some thirty articles about basic spelling skills (from elementary to college level). Although these disagree considerably on teaching methods, they concur in listing the following as virtually the only English spelling consistent rules:

[25] Ibid., p. 178.

ADDING PREFIXES OR SUFFIXES TO ROOT WORDS

IN ALL INSTANCES IN THIS COLUMN,
SIMPLY COMBINE THE PARTS, WITHOUT
ADDING/SUBTRACTING/CHANGING/DOUBLING
ANY LETTERS:

1. Any prefix + root

   Any root + suffix (except in cases in right column):

2. Keep final silent e when root word ends consonant + e + consonant suffix	Drop final silent e when root word ends consonant + e + vowel suffix
3. Keep final y when root word ends consonant + y + -ing when root word ends vowel + y	Convert final y to i when root word ends consonant + y + [illegible], or + [illegible] suffix except -ing
4. Do not double the final consonant when root word ends vowel-consonant-consonant, or vowel-vowel-consonant or when accent precedes final syllable or + consonant suffix	Double the final consonant when root word ends consonant-vowel-consonant and when word is single syllable, or accent is on final syllable and + vowel suffix

CHOOSING IE OR EI

5. If sound is ē, I BEFORE E EXCEPT AFTER C (CEI).

   If sound is not ē -- if it's anything else -- reverse the rule:

   E BEFORE I EXCEPT AFTER C (CIE).

Note: These rules, though they do have a few exceptions, are perhaps 90-95% accurate. It was therefore believed that students should first master the rules without concern for the exceptions (an area in which traditional spelling instruction seems often to have bogged down).

C. A sampling was collected of commonly misspelled words which are not governed by the rules above, but for which a spelling memory gimmick already exists, or could be created. These include such old standards as "The principal is a pal," and "There's a rat in separate," to such apparently new maxims as "We're on the edge of knowledge," and "There's iron in the environment." A graphic presentation of these memory gimmicks, distributed as a student handout, is included in Appendix C.

II. Exercise materials were developed for each such spelling skill-concept, appropriate to be practiced respectively by group drill in the classroom or by individual self-instructional package. Copies of these exercise materials appear in Appendix C, as follows:

A. Exercises on homonyms to/too/two, their/there/they're, your/you're, its/it's, than/then, and a/an.

Answer key for homonym exercise.

Practice sheet, correcting misspelling homonyms in students' sentences

B. Practice on Rule #1, Combining prefix + basic root word + suffix without adding/subtracting/changing/doubling any letters when no other rule applies

Practice on Rule #2, Dropping final silent e only when root word ends consonant + e, + vowel suffix

Practice on Rule #3, Converting final y to i only when root word ends consonant + y, + -es or any suffix except -ing

Practice on Rule #4, Doubling the final consonant only when root word ends consonant-vowel-consonant, and when word is single syllable, or root's final syllable is accented, and + vowel suffix

Practice on Rule #5, Choosing ie or ei
If sound is ē, I before E except after C (CEI).
If sound is not ē--if it's anything else--reverse rule:
E before I except after C (CIE).

Answer key for exercises on rules #1-5

C. Mnemonic devices for memory words (graphic handout)

III. A pretest was developed and administered, to measure and compare participants' starting levels in these spelling skill-concepts -- and at least equally important, to acquaint each participant with his own starting level as a means of motivating his efforts in this unit. A study by Thomas Horn demonstrated that "a test-study-test procedure is superior to a study-test procedure. The first major task in mastering a particular word list is to administer a pretest, preferably at the beginning of the week, so that the pupils may determine which words they already know how to spell and which will require their study. Clear knowledge of the exact task at hand is a powerful motivating factor for the individual pupil."[26]

The majority of the pretest was written by the present author, to specifically demonstrate the student's use of the five rules, listed above. One portion, however, was borrowed from Cambridge Book Company, publishers of our currently adopted textbook. This portion consisted of a set of twenty sentences; in each, the student chose between two possible homonym spellings.[27] Thereafter, he was asked to indicate whether he was "certain of answer" or "guessed at answer."

[26]Thomas D. Horn, The Effect of a Syllabic Presentation of Words Upon Learning to Spell. State University of Iowa, 1947. Quoted by Ronald W. Hinrichs, "An Old but Valid Procedure," Elementary English, 52:251 (February, 1975).

[27]No author listed, Spelling (New York: Cambridge Book Company, 1971), p. 54.

This feature was believed to be of affective importance: some who "guessed at answer" knew they didn't know; but others--who missed items when they had been "certain of answer"--were jolted to realize this, and seemed somewhat more motivated thereby.

A copy of the pretest is included as Appendix D.

An analysis of the pretest is included as Tables 1 and 2.

IV. DEFINITION OF POPULATION, AND SELECTION PROCESS FOR TWO POPULATION GROUPS - The participating population was composed of the writer's current classes: Developmental Writing 091.013, Communications 131.003, English 101.003, English 101.010, and English 101.015. The spelling pretest was returned and discussed. The spelling unit was then explained to each class, as well as its two methods: self-instructional package or classroom drill.

Each student was asked to select and sign up for which method he would use, with these incentives: Those selecting self-instruction were given the package unit and instructions for its completion (including self-checking with answer key). They were then exempted from class attendance during the 2-3 hours the other group would be drilling. Special arrangements were made for veterans to complete their packages in the El Centro Individual Study Center (but at their choice of times), so their attendance could still be counted. Those selecting classroom drill would meet for 2, 2½, or 3 class hours (depending on the calendar of each section), during regularly scheduled class times.

TABLE 1

RESULTS OF PRETEST - HOMONYM PORTION, QUESTIONS 1-20
Pretest instrument: Cambridge Book Company

N = 55	Quantity of errors per question	Quantity of errors in this set	Average errors per question
TO/TOO/TWO			
# 7 - too (correct answer)	14		
# 9 - too	21		
#11 - two	-	68	13.6
#18 - too	17		
#20 - too	16		
ITS/IT'S			
# 1 - it's	9		
# 5 - its	10	30	10
#14 - its	11		
THEIR/THERE/THEY'RE			
# 4 - their	3		
# 6 - they're	3		
# 8 - their	5	17	2.83
#13 - there	3		
#15 - their	2		
#19 - they're	1		
THAN/THEN			
# 3 - than	5		
#12 - then	4	16	5.3
#16 - than	7		
YOUR/YOU'RE			
# 2 - your	1		
#10 - you're	1	9	3.
#17 - you're	7		
TOTAL	140	140	7.

Notes: Greatest number of errors were on <u>to</u> vs. <u>too</u>; classroom experience confirms this.

Retrospective problems with this instrument:
No questions correctly use <u>to</u> as preposition or as infinitive marker.
Only one question uses <u>there</u>, as an adverb of place.
No questions use <u>there</u> as expletive with a "to be" verb; yet classroom experience indicates this is a serious problem area.
This instrument thus inaccurately reflects only minor problems with their/there/they're.

TABLE 2

RESULTS OF PRETEST - SPELLING RULES PORTION, QUESTIONS 21-50

	Quantity of errors per question	Quantity of errors in this set	Average errors per question
Rule 1 (simple combining)			
#30 - government	6		
#38 - accidentally	12		
#40 - disappoint	23	87	17.4
#41 - misspelled	32		
#45 - repetition	14		
Rule 2 (final e + suffix)			
#21 - coming	2		
#35 - writing	18	48	12
#36 - guidance	13		
#46 - definitely	15		
Rule 3 (final y + suffix)			
#37 - carrying	11	22	11
#39 - business	11		
Rule 4 (doubling consonant)			
#22 - occurring	45		
#23 - referred	27	85	21.25
#33 - preference	7		
#34 - forgotten	6		
Rule 5 (ie vs. ei)			
#24 - forfeited	12		
#25 - received	6	73	18.25
#27 - conscience	40		
#42 - seize	15		
Memory words and miscellaneous			
#26 - affected	21		
#28 - irrelevant	34		
#29 - principle	17		
#31 - its	21		
#32 - it's	15		
#43 - mathematics	18	216	19.6
#44 - medicine	7		
#47 - occasionally	24		
#48 - existence	23		
#49 - independence	19		
#50 - environment	17		
TOTAL	531	531	17.7

Note: In multiple choice questions, five possible answers were presented on most questions; #31, 32, 35 had three options; #40 had four options. So an incorrect answer might reflect the simple opposite of applying the rule, or might be in another portion of word.

V. ASSUMPTIONS MADE

It was assumed that the participating population represented a normal or slightly below normal distribution of intelligence (as previously discussed re the nature of the institution).

It was assumed that the two methods would appeal to different types of students.

The self-instructional package method was expected to attract two types:

The stronger student, with a generally high grade average, good score on spelling pretest, and self-confidence in his ability to succeed with a self-instructional package.

The low-motivation student, with below-average grades, low score on spelling pretest, low opinion of his own spelling ability in the past and his spelling aptitude in the future, and a sporadic attendance history. In short, it is assumed that this student would expect poor results from either method, but since the self-instructional package offered "a couple of free cuts," he would opt for it. "...the junior college student may frequently be one who has stopped trying in the academic situation; motivation and interest may be depressed because of the relative lack of successful school experiences in the past."[28]

The classroom drill method was expected to attract one primary type of student: those who were concerned about their spelling skills and/or their grades, but who were insecure about being able to succeed

[28]K. Patricia Cross, The Junior College Student: A Research Description (Princeton, New Jersey: Educational Testing Service, 1968), p. 52.

with a self-instructional package. It was assumed such students would fear missing something crucial by not attending the class sessions (and therefore also had few previous absences). This population would include a number of "New Students"--generally not very secure in their college experiences, often just beginning to see progress, and feeling threatened by anything new or experimental which changed the routine. These students would seem to typify those described by Warren; his study found that, compared to four-year state college and four-year private college students, junior college students were the "most cautious, prudent, and controlled, most apprehensive and rigid in their concerns over grades and academic standing."[29] (Predictably, such students reacted nervously to the responsibility of choosing between the two methods, but also predictably, most of this type chose classroom drill.)

It was assumed that some students (of whichever type mentioned above) would have had previous experiences with self-instructional packages in other courses. Their results and attitudes toward these -- understood material or not, made high grade vs. low, were able to apply self-discipline during unsupervised study time vs. were not, were able to stay on schedule vs. falling behind, were able to consult teacher when needed vs. seeing this as "teacher's cop-out" to avoid explaining material -- could influence their acceptance of this package, pro or con (and perhaps in turn cause them to influence

[29] J. R. Warren, Patterns of College Experience, USOE Cooperative Research Project S-327. Claremont: College Student Personnel Institute and Claremont Graduate School and University Center, October, 1966. Quoted by K. Patricia Cross, The Junior College Student: A Research Description (Princeton, New Jersey: Educational Testing Service, 1968), p. 33.

classmates who had not had such previous experiences). It was further assumed that providing a choice could resolve any such conflicts.

It was thus assumed that some students would prefer not to work by self-instructional package -- because of unsuccessful past experience, insecurity, or whatever reason. It was further assumed that optimum results on a self-instructional package come when such a method is chosen voluntarily, not assigned, and that such optimum results necessitate a certain advance commitment on the student's part.

VI. LIMITATIONS PRESENT

Total freedom of student choice between the two methods was potentially limited by the necessity to have a sufficient number in each group, for statistical purposes. This limitation was met as follows: In each class, the choice was explained and students were asked to sign up by preference: self-instructional package or classroom drill. If an approximately balanced number chose each method, the same choice was offered to the next class. The reserve plan was that if the groups became lopsided, one whole class (or more) would simply not be offered a choice; that section would use whichever method had a deficit N. The reserve plan, however, was not used; the two methods attracted approximately balanced groups.

One further limitation will be discussed in the following section regarding the post-test.

VII. POST-TEST

Both halves of each class (those who had chosen self-instructional package and those who had chosen classroom drill) reconvened to take

an identical post-test. This test was composed of 150 multiple-choice questions and machine scored, to achieve maximum objectivity and to eliminate such subjective grading factors as handwriting ("Is this an a or an o?")

"When one reads published reports on misspelling, the printing of the report obscures a great truth--that many words in student writing have been formed so carelessly that one cannot be sure whether or not they are misspelled, or, if so, how. More use of photographs of handwritten words in published research would help to convey some sense of the problem the spelling investigator faces in illegibility."[30] This, however, imposed another limitation: The multiple-choice answer which a student selects (correct or incorrect) might not reflect his spelling of that word if written longhand.

Of the 150 questions,

38 items were on spelling of homonyms (19 sets -- selecting correct spelling in given context, then identifying the correct usage of each);

12 items selecting correct spelling of words from memory gimmick list;

60 items selecting correct spelling of words covered by Rules 1-5;

40 items identifying the applicable Rule 1-5.

A copy of the post-test is included as Appendix E.

VIII. RESEARCH QUESTIONS AND STATISTICAL ANALYSES

After administration of the post-test, raw data were tabulated, including the following information for each participant:

[30] Richard Braddock, Richard Lloyd-Jones, and Lowell Schoer, Research in Written Composition (Champaign, Illinois: National Council of Teachers of English, 1963), p. 50.

pretest - raw score (of 50 possible) and percentage correct

previous average in course, expressed as a percentage

number of hours absent during weeks 1-10 (preceding spelling unit)

post-test raw score (of 150 possible) and percentage correct

percentage increase or decrease in spelling scores (pretest to post-test)

percentage increase or decrease in course average with inclusion of spelling score

Then, for each group (those working by self-instructional package and those working with class), the following were calculated: median score, mean score, and frequency distribution by letter grade. Finally, in order to determine whether either method produced significantly better results than the other, a t-test of significance was employed, including the following calculations: standard deviation, sum of squared deviations, degrees of freedom, and calculated t-value.

The hypothesis (expectation) being tested was that mean scores of groups studying minimal spelling skills by self-instructional package and groups studying minimal spelling skills by classroom drill would differ significantly.

RESULTS

TABLE 3

STATISTICAL SUMMARY OF EXPERIMENTAL RESULTS

	N	MEAN	STANDARD DEVIATION	SUM OF SQUARED DEVIATIONS
Self-instructional package group	32	119.91	16.79	9018.78
Classroom drill group	23	118.57	17.02	6659.40

Degrees of freedom 53

Critical t table value = 2.000

Calculated t value = 0.285

STATEMENT OF PROBLEM Do groups studying minimal spelling skills by self-instructional package and groups studying minimal spelling skills by classroom drill achieve similar results?

HYPOTHESIS (EXPECTATION) Mean scores of groups studying minimal spelling skills by self-instructional package and groups studying minimal spelling skills by classroom drill will differ significantly.

CONCLUSION Since the calculated value of t (0.285) does not exceed the critical value of t (2.000), the null hypothesis (H_o) cannot be rejected; there is no significant difference between the mean scores of the two groups.

Note: Statistical computations are included as Appendix F.

TABLE 4

CUMULATIVE COMPARISON OF THE TWO GROUPS

	Classroom drill group	Self-instructional package group
Number *	23 (28)*	32 (34)*
Pretest scores		
Mean raw score	36.91	39.47
Mean percentage score	73.82%	78.94%
Post-test scores		
Mean raw score	118.57	119.91
Mean percentage score	79.04%	79.94%
Median raw score	120.	122.5
Post-test frequency distribution		
A = Raw score 135-150, 90-100%	7 (30.4%)	9 (28.1%)
B = Raw score 120-134, 80- 89%	5 (21.7%)	8 (25.0%)
C = Raw score 105-119, 70- 79%	6 (26.0%)	8 (25.0%)
D = Raw score 90-104, 60- 69%	3 (13.0%)	5 (15.6%)
F = Raw score - 89, - 59%	2 (8.7%)	2 (6.2%)
Previous course average	64.5%	69.3%
Hours previous absence	1.10	2.37
Percent change in spelling (pretest to post-test)	5.22%	1.20%
Higher % score on post-test	18 (78.3%)	15 (46.9%)
Lower % score on post-test	5 (21.7%)	14 (43.7%)
Same % score on post-test	--	3 (9.4%)
Percent change in course average	+ 1.99%	+ 1.55%
Raised average *	24	27
Lowered average *	4	7

* Some individuals were concurrently enrolled in two of these classes: both Communications 131 and English 101. Thus taking the spelling unit and its post-test once affected their averages in two courses.

** Raw data on the two groups are included as Appendix G.

By the figures in Table 4, the two groups are seen to be quite similar. The frequency distribution was positively skewed for both groups -- more A's and B's than C's -- rather than approximating a bell curve. Both groups generally raised their course averages by this unit (by +1.99% and +1.55%, respectively).

Several contrasts, however, may be noted between the two groups: The mean raw scores on both pretest and post-test of the self-instructional package group were higher than those of the classroom drill group. However, the percentage increase (pretest to post-test scores) was greater for the classroom drill group (5.22%) than for the self-instructional package group (1.20%).

In the self-instructional group, 46.9% raised their spelling score between pretest and post-test, vs. 78.2% who did so in the classroom drill group. The self-instructional package group had a prior absence rate more than double that of the group choosing classroom drill (1.10 vs. 2.37 hours).

These contrasts invite further investigation (and will be pursued in the Discussion, Implications, and Recommendations section).

DISCUSSION, IMPLICATIONS, AND RECOMMENDATIONS

The two groups -- those studying minimal spelling skills by self-instructional package and those studying the same by classroom drill -- were apparently well balanced. Statistically, by calculation of the t-test, they were balanced to the point of revealing no significant difference between their mean scores. This would imply that each method attracted a balanced range of prior spelling skills; that those in each group were balanced in motivation and resultant effort; and that those in each group "learned" approximately the same amount; and that hence the two teaching methods (self-instructional package vs. classroom drill) worked equally well.

An analytical comparison of the two groups, however, reveals several interesting differences. As was noted in Table 4, the mean scores on both pretest (39.47 = 78.94%) and post-test (119.91 = 79.94%) of the self-instructional package group were higher than those of the classroom drill group (36.91 = 73.82%, 118.57 = 79.04%). The implication that the former group included stronger students than the latter could be investigated by checking their previous class averages. However, the percentage increase (pretest to post-test scores) was greater for the classroom drill group (5.22%) than for the self-instructional package group (1.20%). In the self-instructional group, 46.9% raised their spelling score between pretest and post-test, vs. 78.2% (almost twice as large a percentage) who did so in the classroom drill group.

To judge the results of this experiment only by the statistical t-test would seem to overlook the value of the systems approach, through which the contrast between pretest and post-test can provide possibly

valuable information.

Since an important purpose of this experiment was to seek a teaching method capable of improving the spelling skills of students -- especially of the "new students" who abound on an open-door, inner-city campus -- further analysis of the groups seems necessary for such guidance. Accordingly, the cumulative comparison of the two groups has been subdivided on the following bases: previous course averages; previous absences; increase vs. decrease of spelling score between pretest and post-test; and analysis within these subgroups of the types of questions missed. This information is included in the following Tables 5-13.

This subdivision provided an opportunity to check some of the more tangible assumptions previously made about the types of students in each group (Procedures section V., pp. 18-20).

It had been assumed that the two methods would appeal to different types of students. The self-instructional package method was expected to attract two types:

-The stronger student, with a generally high grade average, good score on spelling pretest, and self-confidence in his ability to succeed with a self-instructional package.

-The low-motivation student, with below-average grades, low score on spelling pretest, low opinion of his own spelling ability in the past and his spelling aptitude in the future, and a sporadic attendance history. In short, it was assumed that this student would expect poor results from either method, but since the self-instructional package offered "a couple of free cuts," he would opt for it.

The classroom drill method was expected to attract one primary type of

student: those who were concerned about their spelling skills and/or their grades, but who were insecure about being able to succeed with a self-instructional package. Such students might fear missing something crucial by not attending the class sessions (and therefore probably had few previous absences). This population would include a number of "New Students" -- generally not very secure in their college experiences, often just beginning to see progress, and feeling threatened by anything new or experimental which changed the routine.

As a first step in analyzing the students in each group, an arbitrary dividing point of 75% was selected: students in each method-group were subdivided into those with "satisfactory" previous course averages of 75% or above, and those below 75%. This produced four subgroups fairly well balanced:

TABLE 5

TWO GROUPS SUBDIVIDED INTO FOUR SUBGROUPS
BY PREVIOUS COURSE AVERAGES

Classroom drill group (N = 23 with 28 averages*) total previous average 64.5%

Previous average 75% up (N = 10 with 10 averages) - average 80.4%

Previous average below 75% (N = 13 with 18 averages*) - average 55.7%

Self-instructional package group (N = 32 with 34 averages*)
total previous average 69.3%

Previous average 75% up (N = 17 with 17 averages) - average 84.9%

Previous average below 75% (N = 15 with 17 averages*) - average 53.6%

* As previously noted on p. 24, some individuals were concurrently enrolled: seven were in both English 101 and Communications 131. Such students thus had two previous averages; as it happened, all fourteen of these averages were below 75%. For each such student, taking the spelling unit and its post-test once affected his average in two courses.

TABLE 6

CUMULATIVE COMPARISON OF THE TWO GROUPS
SUBDIVIDED INTO FOUR SUBGROUPS BY PREVIOUS COURSE AVERAGES

	Classroom drill group		Self-inst. pkg. group	
	Previous average 75% up	Previous average below 75%	Previous average 75% up	Previous average below 75%
Previous course average	80.4%	55.7%	84.9%	53.6%
Number*	10	13 (18*)	17	15 (17*)
Hours previously absent	1.35	2.77	1.35	4.16
Pretest scores				
Mean raw score	40.2	34.38	43.47	34.93
Mean % score	80.4%	68.76%	86.94%	69.86%
Post-test scores				
Mean raw score	130.8	109.23	131.41	107.53
Mean % score	87.2%	72.82%	87.60%	71.68%
Median score	136.5	113.	135.	105.
Post-test frequency dist.				
A = 135-150, 90-100%	7	-	9	-
B = 120-134, 80- 89%	1	4	6	3
C = 105-119, 70- 79%	1	5	2	5
D = 90-104, 60- 69%	1	2	-	5
F = - 89, - 59%	-	2	-	2
Percent change in spelling	+ 6.8%	+ 3.92	+ .64	+ 1.73
Higher on post-test	10	8	9	6
Range	+1 to +29	+3 to +20	+1 to +10	+3 to +22
Average	+ 6.8%	+ 9.125	+ 6.	+10.83
Lower on post-test	-	5	6	8
Range		-1 to -11	-2 to -11	-2 to -11
Average		- 4.4	- 7.17	- 5.75
Same	-	-	2	1
Percent change in average	+ .83%	+ 2.63%	+ .32%	+ 2.77%
Raised average*	8	16	12	15
Range	+.2 to +2.2	+.3 to +5.8	+.1 to +2.	+1.to +7.9
Average	+ 1.25%	+ 2.98%	+ .76%	+ 3.19%
Lowered average*	2	2	5	2
Range	-.3,-1.4	-.1,-.2	-.1,-1.5	-.3,-.7
Average	- .85%	- .15%	- .72%	- .5%

* Including those concurrently enrolled in two courses (see p. 28).
Raw data for Table 6, by individuals, is included as Appendix H.

This comparative analysis of the two method/groups, subdivided into four subgroups by previous course averages, bore out the tangible assumptions about the types of students who would be attracted to the self-instructional package. The following frequency distribution shows that the stronger students, with the higher previous averages, and the weaker students, with the lower previous averages, were attracted to the self-instructional package. Of the four subgroups, the two self-instructional package groups had both the highest (84.9%) and lowest (53.6%) mean averages.

TABLE 7

FREQUENCY DISTRIBUTION OF FOUR SUBGROUPS' PREVIOUS COURSE AVERAGES

Previous averages in course	Classroom drill group		Self-instructional package group	
90 - 100	-	N 10	3	N 17
80 - 89.9	4	Av. 80.4%	12	Av. 84.9%
75 - 79.9	6		2	
70 - 74.9	2		2	
60 - 69.9	7		5	
50 - 59.9	3	N 18	3	N 17
40 - 49.9	3	Av. 55.7%	5	Av. 53.6%
30 - 39.9	2		1	
29 - 29.9	1		1	

Also borne out was the assumption that students with high scores on the spelling pretest would be attracted to the self-instructional package:

TABLE 8

FOUR SUBGROUPS' PRETEST AVERAGES

	Classroom drill group	Self-instructional package group
Previous average 75% up	80.4% average on pretest	86.94% average on pretest
Previous average below 75%	68.76% average on pretest	69.86% average on pretest

These results seem to reflect those of Manolakes' study, in which "the sample involved 2329 children in grades 2 through 6. At the beginning of the school year, each child was administered the 50 word spelling list derived from the program for his or her present grade placement. In addition, each child was administered the 50 word list for the level one grade above present placement....The results strongly suggest that many of the children in this sample already knew how to spell a substantial number of the words included in the spelling program at each grade level (av. 75.651%). Further, the average child in this suburban sample seemed also able to spell a substantial number of words that have been designated for the level one grade above the present grade placement (av. 63.578%).

"These findings suggest the possibility that large numbers of children may be spending a good part of their time in school with instructional activities that they could already successfully complete before they reached the grade level in the instructional sequences. In the upper

quartiles at each grade level, the percentages of words spelled correctly were above 95%. These data also suggest the need for a reconsideration of the impact of those classroom experiences that might be classified as direct instruction, since there is clearly the possibility that the input related to spelling achievement may be gained from sources other than the classroom....More disturbing is the possibility that one of the real ingredients of 'school success' may be the degree to which you already know what the curriculum is about to offer you."[31]

It had further been assumed, and proved to be accurate, that the low-average (see Table 7, p. 30) and absence-prone student would be attracted to the self-instructional package:

TABLE 9

FOUR SUBGROUPS' ABSENCES AVERAGES

	Classroom drill group	Self-instructional package group
Previous average 75% up	1.35 hr. absence	1.35 hr. absence
Previous average below 75%	2.77 hr. absence	4.16 hr. absence

Table 6 (p. 29) included analysis of the number of students in each subgroup who made a higher percentage score on the post-test than on the pretest, vs. those earning a lower percentage, vs. those with same percentage on both. This contrast, shown in Table 10, could reflect the extent to which cognitive learning had taken place.

[31] George Manolakes, "The Teaching of Spelling: A Pilot Study," Elementary English, 52:243-244, 247 (February, 1975).

TABLE 10

FOUR SUBGROUPS' CHANGES IN PRETEST - POST-TEST SCORES

	Classroom drill group		Self-inst. pkg. group	
	Previous average 75% up	Previous average below 75%	Previous average 75% up	Previous average below 75%
Number who scored higher on post-test than pretest & their post-test average	10 87.2%	8 74.2%	9 89.5%	6 75%
Number who scored lower on post-test than pretest & their post-test average	--	5 70.7%	6 85.3%	8 68.8%
Same score on post-test & their post-test average	--	--	2 86%	1 68%

No one in the higher-average classroom drill group went down in their spelling scores, or stayed the same; all increased. But both segments of the self-instruction package group had a sizable number -- over half those who opted to work by self-instruction package -- who went down or stayed the same. Further investigation may suggest reasons for this.

Two basic question types comprised the post-test:

19 select correct homonym spelling	19 identify correct homonym usage
12 select correct spelling of words from memory gimmick list	
60 select correct spelling of words covered by Rules 1-5	40 identify application of Rules 1-5
91 total select correct spelling	59 total identify applicable usage or rule

(It is assumed that questions in the usage/rule set more nearly reflect specific cognitive learning as a probable direct result of this unit -- vs. the set selecting correct spelling, which could reflect prior knowledge and/or just recognizing what "looks right.")

TABLE 11

ANALYSIS OF POST-TEST ERRORS BY FOUR SUBGROUPS

	Classroom drill group		Self-inst. pkg. group	
	Previous average 75% up N = 10	Previous average below 75% N = 13	Previous average 75% up N = 17	Previous average below 75% N = 15
Post-test questions missed, by type				
Select correct spelling (91 questions)				
Total missed	105	256	133	322
Average per question	1.14	2.82	1.46	3.54
Identify applicable usage or rule (59 questions)				
Total missed	87	274	163	324
Average per question	1.47	4.64	2.76	5.49
Post-test totals (above) subdivided to compare results, pretest to post-test				
Those whose spelling score increased, pretest to post-test	N = 10	N = 8	N = 9	N = 6
Select correct spelling				
Total missed	105	160	68	117
Average per person	10.5	20.	7.55	19.5
% of 91 total questions	11.5%	22 %	8.3 %	21.4%
Identify usage/rule				
Total missed	87	150	74	108
Average per person	8.7	18.75	8.22	18.
% of 59 total questions	14.7%	31.8%	13.9%	30.5%
Those whose spelling score decreased, pretest to post-test	N = 0	N = 5	N = 6	N = 8
Select correct spelling				
Total missed		96	39	182
Average per person		19.2	6.5	22.75
% of 91 total questions		21.1%	7.1%	25 %
Identify usage/rule				
Total missed		124	73	192
Average per person		24.8	12.17	24.
% of 59 total questions		42 %	20.6%	40.7%
Those scoring same %	N = 0	N = 0	N = 2	N = 1
Select correct spelling			26,13,14.3%	23,25.3%
Identif, usage/rule			16, 8,13.6%	24,40.7%

Table 11, p. 34, pursued the assumption that the usage/rule questions more nearly reflect specific cognitive learning as a probable direct result of this unit, vs. questions of selecting correct spelling, which could reflect prior knowledge and/or just recognizing what "looks right." In such pursuance, Table 11 analyzed the two types of post-test questions and the proportion missed by each of the four subgroups. Each subgroup is further divided by those whose spelling scored increased, decreased, or stayed the same -- and the types of questions missed.

Table 11 indicates that students in general had far more difficulty with the usage and rules questions than with selecting correct spelling. The implication is of greater reliance on what they previously knew, and less on specific cognitive knowledge (and perhaps less study effort) of usages and rules covered in this unit. This would clearly affect, if not account for, the number (over half) of those working by self-instructional package whose post-test score was less than or same as their pretest score.

The two groups with previous class averages above 75% may be compared. Perhaps it is significant that 100% of the classroom drill group raised their spelling scores, while only 53% of this self-instructional package group did so. Several speculative explanations of this are possible:

Perhaps the classroom drill group more nearly covered all phases of the unit -- both spelling and rules -- while only a portion of the self-instructional package group was equally thorough.

Perhaps those who chose the self-instructional package more nearly habitually work at capacity -- and thus have less room to go up.

Perhaps the self-instructional package group whose scores declined

concentrated on the spellings, more-or-less to the exclusion of the rules. This subgroup had the lowest of all groups on percentage of misspellings (7.1%), but the highest proportionate number of rules questions missed (20.6% -- almost three times as many errors of this type as of the misspellings).

Perhaps the high pretest scores may have acted as a negative motivator, and suppressed study efforts. The self-instructional package group whose scores declined had the highest pretest average of any subgroup: 92.66%. This may have implied that serious further work on spelling was unnecessary. (Yet on the post-test, including the more difficult usage and rules cognitive questions, this same group's average declined to 85.3%.)

This pretest effect was also noted in the subgroups with previous averages below 75%: Those whose post-test scores declined had higher pretest scores than those whose spelling scores increased:

TABLE 12

TWO SUBGROUPS' PRETEST - POST-TEST CHANGES COMPARED TO PRETEST AVERAGES

	Classroom drill group	Self-instructional package group
Those whose post-test scores increased	65 % av. on pretest	64 % av. on pretest
Those whose post-test scores declined	74.8% av. on pretest	74.5% av. on pretest

These figures imply that a low pretest score may serve as a positive motivator, while a high pretest score may serve as a negative motivator, and suppress effort.

On the spelling post-test, a great majority of students (51* - 82%) did score above their averages; only 11* (18%) scored below, and thus lowered, their averages.

TABLE 13

FOUR SUBGROUPS' SPELLING UNIT'S EFFECTS ON COURSE AVERAGES

	Classroom drill group		Self-inst. pkg. group	
	Previous average 75% up	Previous average below 75%	Previous average 75% up	Previous average below 75%
Scored above average	N = 8	N = 16	N = 12	N = 15
Scored below average	N = 2	N = 2	N = 5	N = 2
Previous subgroup average	80.4%	55.7%	84.9%	53.6%
Post-test subgroup average	80.4%	72.8%	87.6%	71.7%
Average change	(same)	+17.1	+ 2.7	+18.1
Range of change	+15.7 -11.8	+40.7 -1.7	+14.2 -7.9	+41.8 - 4.8
Subgroup's increase in course average	+ .83%	+3.92%	+ .32%	+1.73%

Though these course average increases are too small to be particularly significant, it is at least interesting to note that the increases by both classroom drill groups were more than double those of their self-instructional package counterpart groups. Several explanations for these score increases are possible:

The spelling unit may simply have been easier and more familiar than material covered by previous objective quizzes (mostly grammar). Twelve students scored more than 20 points above their averages;

* Including those concurrently enrolled in two courses (see p. 28).

of these, seven scored more than 30 points above their averages, and two more than 40! For many of these, spelling was the first test they had passed all semester.

The spelling unit may therefore have been seen as a chance to raise their averages. Perhaps the spelling seemed less foreign than grammar -- more familiar and more possible to pass. The good-chance-to-raise-your-average idea was promoted as a possible motivator.

For some, the choice of study method may have been a new dimension, which could have increased interest and motivation.

Recommendations

As seems typical in research, a major outcome of the present study has been in raising questions which need further investigation and study, such as the following:

How does spelling in writing compare with spelling selection in multiple-choice questions? Is there a significant difference in the number and type of errors, or can the multiple-choice fairly accurately reflect a student's written spelling ability?

What type of student is most successful with a self-instructional package (on spelling and/or other materials)? How may he be objectively described? If such a package is an optional learning method, who should be encouraged or "qualified" to take such a package, and who should be discouraged or disqualified? Should the student's previous grade average be a determinant?

It would be worthwhile to analyze the study methods used by self-instructional package students. How much time do they spend in studying? When did they study: in several spaced sessions, or one "cramming"

session shortly before the exam? Just what and how did they study? By what organization did they approach the package? And how does this compare with the time and methods used by the classroom group? To what extent were the self-instructional package students as thorough in their coverage of the material? To what extent did they separate what they already knew, the better to concentrate on the previously unlearned material?

Two different cognitive skills seem represented in the spelling unit: the rules/usages could be considered analytical (someone who mastered the rule could apply it to figure out the spelling); or the individual spelling words could simply be memorized, more-or-less ignoring the rules. Recall that the self-instructional package subgroup, with a previous course average of 82.18% and a pretest average of 92.66%, declined to a post-test average of 85.3%. Yet this subgroup had the lowest of all groups on percentage of misspellings (7.1%), but the highest proportionate number of rules questions missed (almost three times as many -- 20.6%). Does this reflect those who have learned to spell by memorization vs. by reasoning?

To what extent do high pretest scores act as a negative motivation? This might be investigated by administering a pretest, arranging scores in descending order, and dividing into two groups by alternating scores. Tell half their score on pretest; don't tell other half. Then see if there is a significant difference in their study efforts and post-test results.

A comparison of optional vs. compulsory self-instructional packages within larger courses should be made, and perhaps cross-referenced with

students' previous averages. Are there negative effects from compulsory self-instructional packages? Do students for whom a self-instructional package is compulsory do as well, or not as well, as students of equal ability who used a self-instructional package by voluntary preference?

The present study is by no means conclusive. Given a wide range of ability levels and previous averages in each method-group, the t-test indicated no significant difference between the mean scores of the two groups. Within these groups, however, certain types of students seem better suited for one method than the other.

Therefore, pending the further studies recommended above, the following may be proposed as tentative working hypotheses:

A strong student (with a generally high previous average, high pretest score, a desire to try a self-instructional package and self-confidence in his ability to succeed with this) should be encouraged to do so. Unlike the present group, however, he should be forewarned that over 1/3 of the post-test questions will deal with rules and usages, and that his present counterpart group made numerous errors on questions of these types. Perhaps this notice would motivate his analysis of rules and usages, and raise his score.

As a further tentative working hypothesis, it would seem that all other students should be advised or required to use the classroom method rather than the self-instructional package. As Cross observed regarding self-paced instruction, "Students have both the privilege and the burden of assuming major responsibility for their own learning, and some students are apparently not ready for or comfortable with that responsibility.

When a self-paced course exists among traditional courses, students are tempted to meet the time demands of the other courses by neglecting the course that makes no rigid external demands. New Students (low achievers) ...who have not experienced success in school-related tasks are especially likely candidates for problems with procrastination."[32]

Pending a study of the effects of compulsory self-instructional packages, then, it would seem advisable that any student who preferred classroom work (even those with a high previous average) should be allowed this method rather than having self-instructional insecurity poisted upon him. And pending any evidence to the contrary, all students with low previous averages should be expected or required to take the classroom method; as previously noted, in the present study, the course average increases of both classroom drill groups (with averages above and below 75%) were more than double those of their self-instructional package counterpart groups.

In conclusion, then, it is recommended that much additional research be conducted in the area of spelling instruction by classroom drill vs. self-instructional package units, and that meanwhile, self-instructional packages be reserved for those who desire to use them, and who meet prerequisites in previous average and pretest scores. All other student "subtypes" seem to fare better with a method of classroom drill.

[32]K. Patricia Cross, Accent on Learning (San Francisco: Jossey-Bass Publishers, 1976), pp. 98-100.

APPENDICES

APPENDIX A

El Centro College

October 11, 1976

Dr. John A. Scigliano
Program Director
Nova University
Fort Lauderdale, Florida

Dear Dr. Scigliano:

This fall semester, for the first time in El Centro's history, the Communications Division administered a writing sample to students who sought admission into our freshman composition course, ENG 101.

The writing samples taught us many things about the entrance writing skills of our students. One particularly outstanding problem was spelling difficulty, particularly with frequently confused words such as "to, too, and two" and "no and know". Spelling was also poor with less commonly misspelled words.

The difficulties were most pronounced among those students whose writing sample we deemed "needs remediation" and registered for an experimental six hour module of writing classes.

I would heartily support a practicum Genell Kelso might do which would assist us in further diagnostic refinement and eventual remedy of these spelling difficulties.

Very truly yours,

Robert C. Bennett

RCB/mb

Main and Lamar
Dallas, Texas 75202

President:
Ruby H. Herd
Dean of Instruction:
W. H. Jordan
Dean of Students:
Don G. Creamer
Dean for Business Affairs:
Robert L. Ware
Associate Dean of Instruction:
Carey L. Rector
Associate Dean of Evening and Adult Education:
Kenneth L. Permenter

EL CENTRO
COLLEGE
OF THE
DALLAS COUNTY
COMMUNITY
COLLEGE
DISTRICT

APPENDIX B

El Centro College

October 11, 1976

Dr. John A. Scigliano
Program Director
Nova University
Ft. Lauderdale, FL

Dear Dr. Scigliano:

Genell Kelso, an instructor in our Communications Division and a graduate student in Nova is interested in developing spelling improvement materials, testing them out in a controlled experimental study in her classes, and comparing and analyzing the results.

It seems to me that we could do with a little improvement in spelling skills. I am aware that many people have tried and not done too well with it. I have been an instructor, chairman of the Developmental Studies Division, dean of instruction and now president and have experienced student needs from all of those vantage points. Spelling has certainly been a problem for many of our students.

I would like to see Genell develop and test out these materials. Prospective employers, four year colleges and universities that accept our transfer students and El Centro college itself are interested in improving spelling skills of our students. Therefore, I am hopeful that she will be able to use this idea as a practicum problem.

Sincerely,

Ruby H. Herd

Ruby H. Herd
President

br

Main and Lamar
Dallas, Texas 75202

President:
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Dean of Instruction:
W. H. Jordan
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APPENDIX C

EXERCISE MATERIALS

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EXERCISES ON HOMONYMS

EXERCISE ON

TWO	TO	TO	TOO	TOO	
NUMBER	DIRECTION/ PREPOSITION	PART OF AN INFINITIVE	ALSO	EXCESSIVE	
					1. Mrs. Parks went -- the grocery store.
					2. Richard asked Mary and Barbara --.
					3. He brought -- cartons of ice cream to the picnic.
					4. -- much pepper can spoil a good casserole.
					5. -- be or not -- be: that is the question.
					6. I want -- hold your hand.
					7. These new sweaters are -- expensive for me.
					8. I'll have -- save my money for a long time.
					9. Robert speaks -- rapidly for us to understand him.
					10. Your stereo is -- loud.
					11. _____ strong a desire for money causes many problems.
					12. They _____ will be attending the concert.
					13. Elizabeth ___ saw the accident.
					14. Elizabeth hopes never _____ see another accident.
					15. Knitting would be fun if I didn't knit _____ slowly.
					16. Our budget is _____ tight for a movie this week.
					17. On Tuesday I must go _____ the dentist.
					18. He says _____ of my teeth need pulling.
					19. But I don't want him _____ pull any of my teeth!
					20. Perhaps I will be unable _____ keep my appointment.
					21. On the other hand, I would have _____ miss work.
					22. I can't afford _____ lose any of my income.
					23. I suppose I must work and see the dentist _____.
					24. I'll be very glad _____ have that appointment be over!
					25. I hope he won't hurt me _____ badly.

EXERCISE ON

THEY'RE CONTRACTION OF THEY ARE	THEIR POSSESSIVE PRONOUN	THERE EXPLETIVE	THERE DIRECTION/ ADVERB	
				1. They stacked _____ books on the desk.
				2. After this rain, _____ should be a rainbow.
				3. Despite _____ protests, we held the meeting.
				4. Those boys already received _____ share.
				5. But _____ greedily asking for more.
				6. _____ not going to get any more.
				7. Still, _____ requests continue.
				8. Is _____ any way to get them to stop?
				9. If _____is a way, let's use it.
				10. I can't take much more of _____ noise.
				11. I'll wait over _____.
				12. When _____ quiet, I'll come back.
				13. Do they realize how much trouble _____ causing?
				14. Can't we appeal to _____ better judgment?
				15. Is _____ anyone who could reason with them?
				16. _____ going to spoil the day for all of us.
				17. That seems to be _____ intention.
				18. Look--_____ being given something else.
				19. It seems to be solving _____ problem.
				20. I certainly hope _____ satisfied.
				21. The leader is _____, by the gate.
				22. _____ is no explanation for his actions.
				23. They must learn to control _____ emotions.
				24. They have stopped _____ noise.
				25. You mean _____ really going to apologize?

EXERCISE ON

IT'S (CONTRACTION OF IT IS (OR IT HAS))	ITS (POSSESSIVE PRONOUN)	
_____	_____	1. _____ a very old car.
_____	_____	2. Although it still runs, _____ engine is sluggish.
_____	_____	3. _____ showing its age.
_____	_____	4. But _____ been a member of the family for over twenty years.
_____	_____	5. Rust spots show through _____ green paint.
_____	_____	6. Inside, torn strips of _____ ceiling dangle down.
_____	_____	7. But _____ still good transportation around town.
_____	_____	8. Best of all, _____ completely paid for!
_____	_____	9. _____ been nicknamed "Goldie."
_____	_____	10. I hope _____ long life continues for many years.

EXERCISE ON

YOU'RE (CONTRACTION OF YOU ARE)	YOUR (POSSESSIVE PRONOUN)	
_____	_____	1. _____ the one they asked about.
_____	_____	2. They wanted to discuss _____ work.
_____	_____	3. They have heard what _____ doing.
_____	_____	4. And they are interested in _____ progress.
_____	_____	5. What are _____ plans for the rest of the afternoon?
_____	_____	6. If _____ free, they will arrange to come back.
_____	_____	7. They would like to see _____ equipment.
_____	_____	8. I'll tell them _____ available at four o'clock.
_____	_____	9. We'll get _____ papers ready to show them.
_____	_____	10. Maybe _____ about to become famous!

EXERCISE ON

THAN	THEN
COMPARISON	TIME (WHEN)

_____ _____ 1. Jean wanted to see this movie more _____ any other.

_____ _____ 2. When she arrived, it was later _____ she thought.

_____ _____ 3. It was _____ that she became upset.

_____ _____ 4. The manager said she couldn't enter if it was later _____ nine.

_____ _____ 5. But even at 9:20, Jean wanted to go in _____.

_____ _____ 6. She thought missing the first part was better _____ missing it all.

_____ _____ 7. She told the manager it was her loss rather _____ his.

_____ _____ 8. She _____ asked again to be admitted.

_____ _____ 9. The manager said, "It's later _____ you think."

_____ _____ 10. But _____ he allowed her to slip in the side entrance.

EXERCISE ON A and AN

Use A before all words beginning with consonant sound:
all regular consonants including H when pronounced;
O when pronounced as W (a once-over, a one-seater);
U when pronounced as Y (a union, a university).

Use AN before all words beginning with vowel sound:
all A's, E's, I's;
O when pronounced as vowel (an opal, an olive);
U when pronounced as vowel (an uncle, an urchin);
H when silent before a vowel (an honor, an hour).

_____ apple	_____ falcon	_____ kitten	_____ party	_____ unity
_____ armadillo	_____ gardenia	_____ lion	_____ quilt	_____ violin
_____ banana	_____ hamburger	_____ man	_____ raisin	_____ woman
_____ cabbage	_____ honest man	_____ noodle	_____ sandwich	_____ xerox
_____ daisy	_____ icicle	_____ ocean	_____ taco	_____ x ray pron. (ĕks'rā)
_____ eagle	_____ igloo	_____ oneness	_____ ukelele	_____ yard
_____ elephant	_____ jaguar	_____ orange	_____ umbrella	_____ zebra

ANSWER KEY FOR HOMONYM EXERCISES

EXERCISE ON

NUMBER	TWO	TO DIR./PREP.	TO INFINITIVE	TOO ALSO	TOO EXCESSIVE		
1.		✓		✓		1. to	
2.				✓		2. too	
3.	✓					3. two	
4.					✓	4. Too	
5.			✓			5. To,to	
6.			✓			6. to	
7.					✓	7. too	
8.			✓			8. to	
9.					✓	9. too	
10.					✓	10. too	
11.					✓	11. Too	
12.				✓		12. too	
13.				✓		13. too	
14.			✓			14. to	
15.					✓	15. too	
16.					✓	16. too	
17.		✓				17. to	
18.	✓					18. two	
19.			✓			19. to	
20.			✓			20. to	
21.			✓			21. to	
22.			✓			22. to	
23.				✓		23. too	
24.			✓			24. to	
25.					✓	25. too	

EXERCISE ON

THEY'RE CONTRACTION OF THEY ARE	THEIR POS. PRON.	THERE EXPLETIVE	THERE DIR./ADVERB	
	✓			1. their
	✓	✓		2. there
	✓			3. their
	✓			4. their
✓				5. they're
✓				6. They're
	✓			7. their
		✓		8. there
		✓		9. there
	✓			10. their
			✓	11. there
✓				12. they're
✓				13. they're
	✓			14. their
		✓		15. there
✓				16. They're
	✓			17. their
✓				18. they're
	✓			19. their
✓				20. they're
			✓	21. there
		✓		22. There
	✓			23. their
	✓			24. their
✓				25. they're

EXERCISE ON

IT'S CONTRACTION IT IS, IT HAS	ITS POS. PRON		IT'S CONTRACTION IT IS, IT HAS	ITS POS. PRON	
✓		1. It's		✓	1. its
	✓	2. its	✓		2. It's
✓		3. It's		✓	3. it's
✓		4. it's		✓	4. its
	✓	5. its	✓		5. It's
	✓	6. its		✓	6. its
✓		7. it's		✓	7. its
✓		8. it's	✓		8. It's
✓		9. It's		✓	9. its
	✓	10. its	✓		10. it's

EXERCISE ON

YOU'RE CONTRACTION OF YOU ARE	YOUR POS. PRON.		YOU'RE CONTRACTION OF YOU ARE	YOUR POS. PRON.	
✓		1. You're		✓	1. your
	✓	2. your	✓		2. you're
✓		3. you're		✓	3. your
	✓	4. your	✓		4. you're
	✓	5. your		✓	5. you're
✓		6. you're		✓	6. your
	✓	7. your	✓		7. you're
✓		8. you're		✓	8. your
	✓	9. your	✓		9. you're
	✓	10. you're		✓	10. your

EXERCISE ON

THAN COMPARISON	THEN TIME (WHEN)		THAN COMPARISON	THEN TIME (WHEN)	
✓		1. than		✓	1. then
✓		2. than		✓	2. then
	✓	3. then	✓		3. than
✓		4. than		✓	4. then
	✓	5. then	✓		5. than
✓		6. than		✓	6. then
✓		7. than		✓	7. then
	✓	8. then	✓		8. than
✓		9. than		✓	9. then
	✓	10. then	✓		10. than

EXERCISE ON A/AN

an	apple
an	armadillo
a	banana
a	cabbage
a	daisy
an	eagle
an	elephant
a	falcon
a	gardenia
a	hamburger
an	honest man
an	icicle
an	igloo
a	jaguar
a	kitten
a	lion
a	man
a	noodle
an	ocean
a	oneness
an	orange
a	party
a	quilt
a	raisin
a	sandwich
a	taco
a	ukelele
an	umbrella
a	unity
a	violin
a	woman
a	xerox
an	x ray
a	yard
a	zebra

IN THE FOLLOWING STUDENT SENTENCES, LOCATE ANY MISSPELLED WORD, AND DRAW A LINE THROUGH IT. ABOVE THIS, WRITE THE CORRECT SPELLING.

1. Their were ten people their.
2. We did not get too use are boat, because the wind was to high.
3. The job demanded to much from on individual.
4. She had gotten to hot from running in the sun.
5. Their in the emergency room she came to.
6. The work schedule was changed to often.
7. They went to San Antonio to visit their relatives their.
8. Some might keep there jobes.
9. I decided weather to attend school are go to the fair.
10. Don had better things to do then wait for me.
11. We saw the Hawaiian ladies and men do there dances.
12. Their weren't any phones around.
13. Friday the 13th was a unlucky day.
14. Most students study so that there school work will be better.
15. They can't do there on work are help others.
16. The window rattles whenever theirs a storm.
17. I always cry when their a sad movie on.
18. Know one is going to do it for you.
19. She just laid their lifeless.
20. There were to many bosses.
21. The bracelet is to tight.
22. Its round at one edge.
23. I wanted too scream.
24. I was to exhausted to drive.
25. People don't have too have any more children then they want.

SPELLING RULE 1

A word is often a combination of parts: PREFIX + BASIC ROOT WORD + SUFFIX.
As a rule*, simply combine these parts,
without adding/subtracting/changing/doubling any letters.

PREFIX	+	BASIC ROOT WORD	+	SUFFIX		
dis	+	appear			=	disappear
mis	+	spell			=	misspell
		usual	+	ly	=	usually
		lone	+	ly	=	lonely
inter	+	nation	+	al	=	international

* Any PREFIX + BASIC ROOT WORD - simply combine.
BASIC ROOT WORD + SUFFIX - simply combine
except in certain cases when basic root word ends in e (rule 2),
or y (rule 3),
or with an accented consonant-vowel-consonant (rule 4).

PRACTICE ON RULE #1

Unless basic root word ends in E or Y or with accented consonant-vowel-consonant, simply combine parts (prefix + basic root word + suffix) without adding/subtracting/changing/dropping/doubling any letters.

Basic root word ends in silent E; apply rule 2 to add suffix.

Basic root word ends with Y; apply rule 3 to add suffix.

Basic root word (not prefix) ends with an accented consonant-vowel-consonant; apply rule 4 to add suffix.

None of the above applies. Apply rule 1: simply combine parts.

					Spell word:
☐	☐	☐	☐	DIS+ABILITY	_____
☐	☐	☐	☐	DIS+SIMILAR	_____
☐	☐	☐	☐	DIS+AGREE	_____
☐	☐	☐	☐	DIS+SOLVE	_____
☐	☐	☐	☐	MIS+TAKE	_____
☐	☐	☐	☐	MIS+LEAD	_____
☐	☐	☐	☐	DE+FINITE	_____
☐	☐	☐	☐	IN+FINITE	_____
☐	☐	☐	☐	DIS+SERVICE	_____
☐	☐	☐	☐	COR+RESPOND	_____
☐	☐	☐	☐	IL+LEGIBLE	_____
☐	☐	☐	☐	MIS+UNDERSTAND+ING	_____
☐	☐	☐	☐	RE+COMMEND+ATION	_____
☐	☐	☐	☐	HUMOR+OUS	_____
☐	☐	☐	☐	IR+RESPONSIBLE	_____
☐	☐	☐	☐	UN+NECESSARY	_____
☐	☐	☐	☐	ACCIDENTAL+LY	_____
☐	☐	☐	☐	BEAUTIFUL+LY	_____
☐	☐	☐	☐	RE+PETITION	_____
☐	☐	☐	☐	IM+MIGRATION	_____
☐	☐	☐	☐	SYM+METRICAL	_____

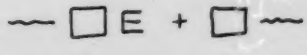
SPELLING RULE 2

IF WORD ENDS WITH SILENT E

Keep final silent e

when root word ends consonant + e

+ consonant suffix



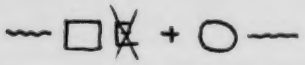
HOPE + FUL = hopeful

LATE + LY = lately

Drop final silent e

when root word ends consonant + e

+ vowel suffix



COME + ING = coming

LATE + EST = latest

NOTE: Hereafter □ = consonant, ○ = vowel A, E, I, O, or U.

PRACTICE ON RULE #2

IF WORD ENDS WITH SILENT E	Check if suffix begins with consonant:	If so, keep E. Spell word:	Check if suffix begins with vowel:	If so, drop E. Spell word:
COME + (I) NG	☐		☑	COMING
LATE + [L] Y	☑	LATELY	☐	
LATE + (E) ST	☐		☐	
HOPE + [F] UL	☐		☐	
HOPE + (I) NG	☐		☐	
FAME + (O) US	☐		☐	
COMBINE + (A) TION	☐		☐	
LOVE + ABLE	☐		☐	
COME + S	☐		☐	
CARE + FUL	☐		☐	
WHITE + ISH	☐		☐	
WHITE + WASH	☐		☐	
USE + ING	☐		☐	
USE + FUL	☐		☐	
NOISE + Y	☐		☐	
NOISE + ILY	☐		☐	
PLEASE + URE	☐		☐	
PLEASE + ANT	☐		☐	
SOLE + LY	☐		☐	
PALE + NESS	☐		☐	
PRECEDE + ENCE	☐		☐	
NINE + TY	☐		☐	
STONE + Y	☐		☐	
GUIDE + ANCE	☐		☐	
RATE + ING	☐		☐	
ENTIRE + LY	☐		☐	

SPELLING RULE 3

IF WORD ENDS WITH y

Keep final y

when root word ends
consonant + y

+ -ing

—□Y + ING

STUDY + ING = studying

TRY + ING = trying

Convert final y to i

when root word ends
consonant + y

+ -es, or
+ any suffix except -ing

—□Y' + ES

STUDY' + ES = studies

—□Y' + ANY OTHER SUFFIX

LONELY' + NESS = loneliness

Keep final y

when root word ends
vowel + y

—OY + ANY SUFFIX

KEY + S = keys

SAY + ING = saying

PRACTICE ON RULE #3

IF WORD ENDS WITH Y

	IF WORD ENDS WITH VOWEL + Y, simply combine. Spell word:	IF WORD ENDS WITH CONSONANT + Y, If suffix is -ING, keep Y. Spell word:	If suffix is -S (-ES), change Y to I. Spell word:	If suffix is any other, change Y to I. Spell word:
K (E) Y + S	K E Y S			
S T U [D] Y + I N G		STUDYING		
S T U [D] Y + S			STUDIES	
L O N E [L] Y + N E S S				L O N E L I N E S S
S (A) Y + I N G				
T [R] Y + I N G				
S A T I S F Y + I N G				
S A T I S F Y + E D				
S A T I S F Y + S				
C A R R Y + I N G				
C A R R Y + S				
P U L L E Y + S				
T R Y + S				
F A M I L Y + S				
C O M P A N Y + S				
B E A U T Y + S				
B E A U T Y + F U L				
J O Y + S				
J O Y + F U L				
B U R Y + S				
B U R Y + I N G				

PRACTICE ON RULE #3, CONTINUED

	IF WORD ENDS WITH VOWEL + Y, simply combine. Spell word:	IF WORD ENDS WITH CONSONANT + Y, If suffix is -ING, keep Y. Spell word:	If suffix is -S (-ES), change Y to I. Spell word:	If suffix is any other, change Y to I. Spell word:
L A D Y + S				
C O P Y + S				
C O P Y + I N G				
M O D I F Y + S				
M O D I F Y + E R				
D I S P L A Y + S				
D I S P L A Y + I N G				
B O U N T Y + S				
B O D Y + S				
E M B O D Y + S				
E M B O D Y + I N G				
E M B O D Y + M E N T				
F A N C Y + S				
H A R D Y + E S T				
C R Y + I N G				
M O N K E Y + S				
E S S A Y + S				
G A L L E Y + S				
R E L A Y + S				
R E L A Y + I N G				
J O C K E Y + S				
J O C K E Y + I N G				

SPELLING RULE 4

IF WORD ENDS WITH CONSONANT - VOWEL - CONSONANT, ACCENTED,
DOUBLE THE FINAL CONSONANT TO ADD A VOWEL SUFFIX.

Do not double the final consonant

when root word ends
vowel-consonant-consonant, or
vowel-vowel-consonant

or

when accent precedes final syllable

or

+ consonant suffix

Double the final consonant

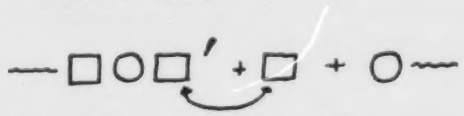
when root word ends
consonant-vowel-consonant

and

when word is single syllable, or
accent is on final syllable

and

+ vowel suffix



Do not double in these cases:

R E P A I R + I N G

I N V E N T + O R

O F F E R + I N G

R E F E R + E N C E

P A Y + M E N T

F I T + N E S S

IN SINGLE-SYLLABLE WORDS

R U N + N + E R = runner

H O P + P + I N G = hopping

P L A N + N + I N G = planning

IN ACCENTED LAST SYLLABLES

O C C U R + R + E N C E
= occurrence

B E G I N + N + E R
= beginner

R E F E R + R + A L
= referral

PRACTICE ON RULE #4

	Root word ends [consonant] (vowel) [consonant] ?	Root word is single syllable OR Root word's last syllable is (and stays) accented?		Suffix begins with vowel?	Checks in all 3 columns? Double root's final consonant. Spell word:	Did not check all 3 columns? Do not double; simply combine. Spell word:
RUN + ER	✓	✓		✓	RUNNER	
HOP + ING	✓	✓		✓	HOPPING	
REFER + AL	✓		✓	✓	REFERRAL	
REFER + ENCE	✓			✓		REF'ERENCE
REPAIR + ING			✓	✓		REPAIRING
PAY + MENT	✓	✓				PAYMENT
PLAN + ING						
OCCUR + ENCE						
BEGIN + ER						
OFFER + ING						
INVENT + OR						
FIT + NESS						
RED + ER						
MEND + ING						
PIN + ED						
NAIL + ING						
SAD + ER						
WISH + FUL						
WISH + ING						
WIN + LESS						
CAN + ED						

PRACTICE ON RULE #4, CONTINUED

	Root word ends consonant (vowel) consonant ?	Root word is single syllable OR Root word's last syllable is (and stays) accented?	Suffix begins with vowel?	Checks in all 3 columns? Double root's final consonant. Spell word:	Did not check all 3 columns? Do not double; simply combine. Spell word:
H A R D + E N	☐	☐	☐	☐	_____
A D M I T + E D	☐	☐	☐	_____	_____
E D I T + E D	☐	☐	☐	_____	_____
O C C U R + E D	☐	☐	☐	_____	_____
O C C U R + E N C E	☐	☐	☐	_____	_____
A T T E N D + A N C E	☐	☐	☐	_____	_____
F O R G E T + I N G	☐	☐	☐	_____	_____
D E V E L O P + E D	☐	☐	☐	_____	_____
I N S I S T + E N C E	☐	☐	☐	_____	_____
A P A R T + M E N T	☐	☐	☐	_____	_____
B E G I N + I N G	☐	☐	☐	_____	_____
P R E F E R + E D	☐	☐	☐	_____	_____
P R E F E R + I N G	☐	☐	☐	_____	_____
P R E F E R + A B L E	☐	☐	☐	_____	_____
R E F E R + E D	☐	☐	☐	_____	_____
R E F E R + I N G	☐	☐	☐	_____	_____
R E F E R + E N C E	☐	☐	☐	_____	_____

SPELLING RULE 5

CHOOSING IE OR EI

IF SOUND IS $\bar{E}$, I BEFORE E — BELIEVE CHIEF PIECE YIELD

EXCEPT AFTER C. — RECEIVE CEILING CONCEIT DECEIVE

(Tell your)FRIENDS(to)SEIZE(at their)LEISURE(these)WEIRD(exceptions.)
There are a few other exceptions, in uncommon words;
but these four are common enough to be worth memorizing.

IF SOUND IS NOT $\bar{E}$ -- IF IT'S ANYTHING ELSE -- REVERSE THE RULE:

E BEFORE I

EXCEPT AFTER C.

$\bar{A}$ sounds - WEIGH THEIR EIGHT NEIGHBOR

$\bar{I}$ sounds - HEIGHT STEIN

sounds - FOREIGN CONSCIENCE EFFICIENT SUFFICIENT

PRACTICE ON RULE #5 BY WRITING WORD IN APPROPRIATE COLUMN:

	If sound is EE, I before E except after C (CEI)		If sound is not EE, E before I except after C (CIE)	
B E L - - V E	BELIEVE			
R E C - - V E		RECEIVE		
T H - - R			THEIR	
S C - - N C E				SCIENCE
- - G H T			EIGHT	
D E C - - V E				
S T - - N				
C - - L I N G				
W - - G H				
E F F I C - - N T				
F O R - - G N				
C H - - F				
N - - G H B O R				
P - - C E				
C O N C - - T				
C O N S C - - N C E				
H - - G H T				
S U F F I C - - N T				
Y - - L D				
D E C - - T				
F - - L D				
R - - G N				
R E L - - F				
P R - - S T				
S - - S M O G R A P H				

PRACTICE ON RULE #5, CONTINUED

	If sound is $\overline{EE}$,		If sound is not $\overline{EE}$,	
	I before E	except after C (CEI)	E before I	except after C (CIE)
C O N C - - V E	_____	_____	_____	_____
T H - - F	_____	_____	_____	_____
P R O F I C - - N T	_____	_____	_____	_____
N - - C E	_____	_____	_____	_____
F R - - G H T	_____	_____	_____	_____
B E L - - F	_____	_____	_____	_____

Practice four important exceptions to Rule #5 by completing this sentence (see Rule 5, p. 62):

T E L L Y O U R _____ T O _____ A T T H E I R

_____ T H E S E _____ E X C E P T I O N S .

REVIEW FOR POST-TEST - Decide which rule is applicable. Then spell the word as rule requires.

Basic root word ends in silent E; apply rule 2: Keep E with consonant suffix; drop E with vowel suffix.

Basic root word ends with Y; apply rule 3: -with vowel + Y, simply combine; -with consonant + Y + -ING, combine; -with consonant + Y + -S (-ES) or any other suffix, change Y to I.

Basic root word (not prefix) ends with consonant-vowel-consonant and in single or accented syllable and adding vowel suffix; apply rule 4: double root's final consonant.

None of the above applies. Apply rule 1: simply combine parts.

					Spell word:
☐	☐	☐	☐	ROB + ED	_____
☐	☐	☐	☐	ROBE + ED	_____
☐	☐	☐	☐	HOP + ING	_____
☐	☐	☐	☐	HOPE + ING	_____
☐	☐	☐	☐	CRY + ED	_____
☐	☐	☐	☐	CRY + ING	_____
☐	☐	☐	☐	CRY + ER	_____
☐	☐	☐	☐	CRY + S	_____
☐	☐	☐	☐	DIS + AGREE	_____
☐	☐	☐	☐	PLAY + ING	_____
☐	☐	☐	☐	PLAY + S	_____
☐	☐	☐	☐	PLAY + ED	_____
☐	☐	☐	☐	MIS + SPELL	_____
☐	☐	☐	☐	RE + COMMEND + ATION	_____
☐	☐	☐	☐	BASE + MENT	_____
☐	☐	☐	☐	RELY + S	_____
☐	☐	☐	☐	RELY + ED	_____
☐	☐	☐	☐	RELY + ING	_____
☐	☐	☐	☐	ACCIDENT + AL + LY	_____
☐	☐	☐	☐	UN + NECESSARY	_____

REVIEW FOR POST-TEST, CONTINUED

Basic root word ends in silent E; apply rule 2: Keep E with consonant suffix; drop E with vowel suffix.

Basic root word ends with Y; apply rule 3: -with vowel + Y, simply combine; -with consonant + Y + -ING, combine; -with consonant + Y + -S (-ES) or any other suffix, change Y to I.

Basic root word (not prefix) ends with consonant-vowel-consonant and in single or accented syllable and adding vowel suffix; apply rule 4: double root's final consonant.

None of the above applies. Apply rule 1: simply combine parts.

					Spell word:
☐	☐	☐	☐	S T O P + E D	_____
☐	☐	☐	☐	S T O O P + E D	_____
☐	☐	☐	☐	L A D Y + S	_____
☐	☐	☐	☐	D E + F I N I T E	_____
☐	☐	☐	☐	I N + F I N I T E	_____
☐	☐	☐	☐	P R O P E R + L Y	_____
☐	☐	☐	☐	P R O P E L + A N T	_____
☐	☐	☐	☐	B E N D + I N G	_____
☐	☐	☐	☐	B E C O M E + I N G	_____
☐	☐	☐	☐	S C A R E + E D	_____
☐	☐	☐	☐	S C A R + E D	_____
☐	☐	☐	☐	T A P + I N G	_____
☐	☐	☐	☐	T A P E + I N G	_____
☐	☐	☐	☐	M A N A G E + I N G	_____
☐	☐	☐	☐	M A N A G E + E R	_____
☐	☐	☐	☐	M A N A G E + M E N T	_____
☐	☐	☐	☐	R E M A I N + I N G	_____
☐	☐	☐	☐	W R I T E + E R	_____
☐	☐	☐	☐	W R I T E + I N G	_____
☐	☐	☐	☐	R E + P E T I T I O N	_____
☐	☐	☐	☐	R E G R E T + I N G	_____

ANSWERS TO SPELLING EXERCISES

Practice on Rule #1 - p. 53
On all, simply combine parts.

Practice on Rule #2 - p. 55

	Suffix w/ cons, keep E	w/ vowel, drop E
LATE+EST		LATEST
HOPE+FUL	HOPEFUL	
HOPE+ING		HOPING
FAME+OUS		FAMOUS
COMBINE+ATION		COMBINATION
LOVE+ABLE		LOVABLE
COME+S	COMES	
CARE+FUL	CAREFUL	
WHITE+ISH		WHITISH
WHITE+WASH	WHITEWASH	
USE+ING		USING
USE+FUL	USEFUL	
NOISE+Y		NOISY
NOISE+ILY		NOISILY
PLEASE+URE		PLEASURE
PLEASE+ANT		PLEASANT
SOLE+LY	SOLELY	
PALE+NESS	PALENESS	
PRECEDE+ENCE		PRECEDENCE
NINE+TY	NINETY	
STONE+Y		STONY
GUIDE+ANCE		GUIDANCE
RATE+ING		RATING
ENTIRE+LY	ENTIRELY	

Practice on Rule #3 - pp. 57-58

	Vowel + Y	Consonant + Y		
		Y + ING	I + ES	I + other
SAY+ING	SAYING			
TRY+ING		TRYING		
SATISFY+ING		SATISFY+ING		
SATISFY+ED				SATISFIED
SATISFY+S			SATISFIES	
CARRY+ING		CARRYING		
CARRY+S			CARRIES	
PULLEY+S	PULLEYS			
TRY+S			TRIES	
FAMILY+S			FAMILIES	
COMPANY+S			COMPANIES	
BEAUTY+S			BEAUTIES	
BEAUTY+FUL				BEAUTIFUL
JOY+S	JOYS			
JOY+FUL	JOYFUL			
BURY+S			BURIES	
BURY+ING		BURYING		
LADY+S			LADIES	
COPY+S			COPIES	
COPY+ING		COPYING		
MODIFY+S			MODIFIES	
MODIFY+ER				MODIFIER
DISPLAY+S	DISPLAYS			
DISPLAY+ING	DISPLAYING			
BOUNTY+S			BOUNTIES	
BODY+S			BODIES	
EMBODY+S			EMBODIES	
EMBODY+ING		EMBODYING		
EMBODY+MENT				EMBODIMENT
FANCY+S			FANCIES	
HARDY+EST				HARDIEST
CRY+ING		CRYING		
MONKEY+S	MONKEYS			
ESSAY+S	ESSAYS			
GALLEY+S	GALLEYS			
RELAY+S	RELAYS			
RELAY+ING	RELAYING			
JOCKEY+S	JOCKEYS			
JOCKEY+ING	JOCKEYING			

Practice on Rule #4 - pp. 60-61

	Ends CVC	One Syl	or Syl'	Vowel Suf	3 ✓? Double	Not
PLAN+ING	✓	✓		✓	PLANNING	
OCCUR+ENCE	✓		✓	✓	OCCURRENCE	
BEGIN+ER	✓		✓	✓	BEGINNER	
OFFER+ING	✓			✓		OFFERING
INVENT+OR			✓	✓		INVENTOR
FIT+NESS	✓	✓				FITNESS
RED+ER	✓	✓		✓	REDDER	
MEND+ING		✓		✓		MENDING
PIN+ED	✓	✓		✓	PINNED	
NAIL+ING		✓		✓		NAILING
SAD+ER	✓	✓		✓	SADDER	
WISH+FUL		✓				WISHFUL
WISH+ING		✓		✓		WISHING
WIN+LESS	✓	✓				WINLESS
CAN+ED	✓	✓		✓	CANNED	
HARD+EN		✓		✓		HARDEN
ADMIT+ED	✓		✓	✓	ADMITTED	
EDIT+ED	✓			✓		EDITED
OCCUR+ED	✓		✓	✓	OCCURRED	
OCCUR+ENCE	✓		✓	✓	OCCURRENCE	
ATTEND+ANCE			✓	✓		ATTENDANCE
FORGET+ING	✓		✓	✓	FORGETTING	
DEVELOP+ED	✓			✓		DEVELOPED
INSIST+ENCE			✓	✓		INSISTENCE
APART+MENT			✓			APARTMENT
BEGIN+ING	✓		✓	✓	BEGINNING	
PREFER+ED	✓		✓	✓	PREFERRED	
PREFER+ING	✓		✓	✓	PREFERRING	
PREFER+ABLE	✓			✓		PREFERABLE
REFER+ED	✓		✓	✓	REFERRED	
REFER+ING	✓		✓	✓	REFERRING	
REFER+ENCE	✓			✓		REFERENCE

Practice on Rule #5 - pp. 63-64

	If sound is ē, I before E	except CEI	If sound is not ē, E before I	except CIE
BEL--VE	BELIEVE			
REC--VE		RECEIVE		
TH--R			THEIR	
SC--NCE				SCIENCE
--GHT			EIGHT	
DEC--VE		DECEIVE		
ST--N			STEIN	
C--LING		CEILING		
W--GH			WEIGH	
EFFIC--NT				EFFICIENT
FOR--GN			FOREIGN	
CH--F	CHIEF			
N--GHBOR			NEIGHBOR	
P--CE	PIECE			
CONC--T		CONCEIT		
CONSC--NCE				CONSCIENCE
H--GHT			HEIGHT	
SUFFIC--NT				SUFFICIENT
Y--LD	YIELD			
DEC--T		DECEIT		
F--LD	FIELD			
R--GN			REIGN	
REL--F	RELIEF			
PR--ST	PRIEST			
S--SMOGRAPH			SEISMOGRAPH	
CONC--VE		CONCEIVE		
TH--F	THIEF			
PROFIC--NT				PROFICIENT
N--CE	NIECE			
FR--GHT			FREIGHT	
BEL--F	BELIEF			

4 exceptions:
Tell your friends to seize at their leisure these weird exceptions.

Review for Post-test - pp. 65-66

Ends -e Rule 2	Ends -y Rule 3	Ends + V Rule 4	CVC' suf.	None Rule 1		
		X			ROB+ED	ROBBED
X					ROBE+ED	ROBED
		X			HOP+ING	HOPPING
X					HOPE+ING	HOPING
	X				CRY+ED	CRIED
	X				CRY+ING	CRYING
	X				CRY+ER	CRIER
	X				CRY+S	CRIES
				X	DIS+AGREE	DISAGREE
	X				PLAY+ING	PLAYING
	X				PLAY+S	PLAYS
	X				PLAY+ED	PLAYED
				X	MIS+SPELL	MISSPELL
				X	RE+COMMEND+ATION	RECOMMENDATION
X					BASE+MENT	BASEMENT
	X				RELY+S	RELIES
	X				RELY+ED	RELIED
	X				RELY+ING	RELYING
				X	ACCIDENT+AL+LY	ACCIDENTALLY
				X	UN+NECESSARY	UNNECESSARY
		X			STOP+ED	STOPPED
				X	STOOP+ED	STOOPED
	X				LADY+S	LADIES
				X	DE+FINITE	DEFINITE
				X	IN+FINITE	INFINITE
				X	PROPER+LY	PROPERLY
		X			PROPEL+ANT	PROPELLANT
				X	BEND+ING	BENDING
X					BECOME+ING	BECOMING
X					SCARE+ED	SCARED
		X			SCAR+ED	SCARRED
		X			TAP+ING	TAPPING
X					TAPE+ING	TAPING
X					MANAGE+ING	MANAGING
X					MANAGE+ER	MANAGER
X					MANAGE+MENT	MANAGEMENT
				X	REMAIN+ING	REMAINING
X					WRITE+ER	WRITER
X					WRITE+ING	WRITING
				X	RE+PETITION	REPETITION
		X			REGRET+ING	REGRETTING

SPELLING MEMORY GIMMICKS

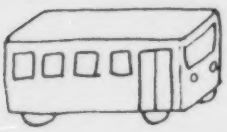
KELSO

These gimmicks can affect (VERB) your spelling. They can have a helpful effect (NOUN).

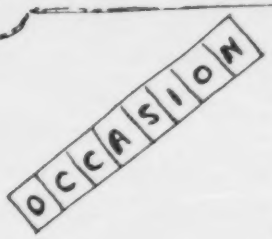
We're on the EDGE of KNOWLEDGE.

Don't BELIEVE a LIE.

It's a PRIVILEGE to have LEGs.

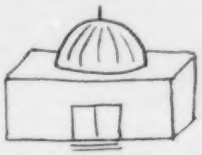


The BUS BUSINESS is busy.



Oliver
Can
Capitalize
And
Spell
If the
Occasion
Needs it).

The CAPITOL (MUST BE A SPECIFIC BUILDING) has a DOME.



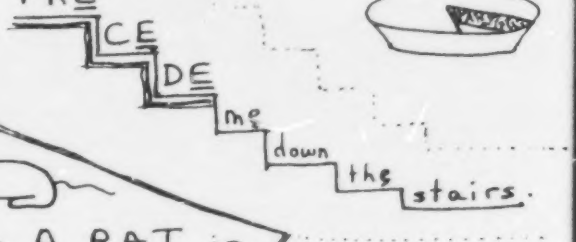
All other uses mean HEAD: CAPITAL CITY, CAPITAL LETTERS, CAPITAL PUNISHMENT, etc.

Being "catty" (CAT-E) may put you in the GORY CATEGORY.

Have a PIECE of PIE.

4 E's in DEPENDENCE or INDEPENDENCE

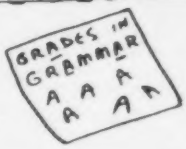
3 E's in EXISTENCE.



There is IRON in the ENV IRON MENT.

There's A RAT in SEPARATE.

Make A's in GRAMMAR.



The PRINCIPAL is a PAL.

(PRINCIPAL parts, PRINCIPAL and interest, etc.)
- MAIN

How IRRELEVANT is an ELEPHANT?

The PRINCIPLE is an IDEA.

Is MATH(E)MATICS EASY?

1 + 2/3

The ending of SIM'ILAR is not SIM'ILAR to FAMIL'IAR.

(Don't say it is, or you'll be a LIAR.)

APPENDIX D

SPELLING PRETEST

How well can you handle the twelve words most frequently confused?
How certain are you of the answers you selected?
CHOOSE AND CIRCLE THE CORRECT FORM IN EACH OF THE FOLLOWING:

		Certain of answer	Guessed at answer
1.	(Its, It's) almost time for us to leave.		
2.	They found (you're, your) notebook on the table.		
3.	It is better to be late (then, than) never to arrive.		
4.	Please give me (there, their) tickets.		
5.	The dog hurt (its, it's) paw yesterday.		
6.	(There, They're) my best friends.		
7.	You walk (to, too) fast for me.		
8.	It is time for (their, there) medicine.		
9.	He (to, too) wants the answer to the problem.		
10.	(Your, You're) the one they are looking for.		
11.	(Two, Too) dollars is the price for the purse.		
12.	It was (then, than) that I saw the accident.		
13.	Put the package over (there, their).		
14.	They found the car minus (it's, its) tires.		
15.	They asked for (there, their) coars and hats.		
16.	It is much later (than, then) you think.		
17.	They want to know if (your, you're) making any progress.		
18.	It is much (to, too) early for us to be able to predict the final outcome of the struggle.		
19.	Let me know when (their, they're) ready.		
20.	Helen told us that she (to, too) saw the pen.		

Appendix D, Spelling Pretest, continued

ON QUESTIONS 21.-50., SELECT AND CIRCLE THE CORRECT SPELLING:

21. Will you be A- comeing, B- coming, C- comming, D- commeing, E- coeming) with me?

22. Strange events are (A- ocuring, B- occuring, C- occering, D- ocurring, E- occurring).

23. The librarian (A- refered, B- reffered, C- refferd, D- referred, E- refferred) me to this book.

24. Because so many players were ill, they (A- forfieted, B- forfeited, C- forfietted, D- forfeitted) the game.

25. Have you ever (A- received, B- recieved, C- recievd, D- recievved, E- receivved) an unsigned letter?

26. The grass has been seriously (A- affected, B- afected, C- afacted, D- efected, E- effected) by the heat.

27. After pretending not to see the accident, Bob's (A- conscius, B- conscience, C- conscious, D- consceince, E- consciense) troubled him.

28. That information is (A- irrelevent, B- irrelevant, C- irrelavent, D- irrevelant, E- irrevelent) to this discussion.

29. Laws are based on the (A- principal, B- principel, C- principle, D- prinsipal, E- prinsipel) of justice for all.

30. Support your (A- goverment, B- governent, C- government, D- governmet, E- governnent).

31. (A- Its, B- It's, C- Its') height is eighteen inches, but

32. (A- its, B- it's, C- its') only seventeen inches wide.

33. A- PREFERENCE, B- PREFERENSE, C- PREFERRENCE, D- PREFFERENCE, E- PREFFERRENCE

34. A- FORGOTEN, B- FORGOTIN, C- FORGOTON, D- FORGOTTEN, E- FORGOTTON

35. A- WRITTING, B- WRITING, C- WRITEING

36. A- GUIDENCE, B- GUIDENSE, C- GUIDANCE, D- GUIDANSE, E- GUIDINCE

37. A- CARYING, B- CAREING, C- CARRYING, D- CAREYING, E- CARREYING

38. A- ACCIDENTALY, B- ACCIDENTALLY, C- ACCIDENTELY, D- ACCIDENTILY, E- ACCIDENTILLY

39. A- BUISNESS, B- BUISINESS, C- BUSINES, D- BUSINESS, E- BUSSINESS

Appendix D, Spelling Pretest, continued

40. A- DISAPPOINT, B- DISAPOINT, C- DISSAPOINT, D- DISSAPPOINT

41. A- MISS-SPELLED, B- MISPELED, C- MISSPELED, D- MISPELLED, E- MISSPELLED

42. A- SEEZE, B- SEIEZE, C- SIEIZE, D- SEIZE, E- SIEZE

43. A- MATHEMATICS, B- MATHEMETICS, C- MATHMATICS, D- MATHAMETICS, E- MATHAMATICS

44. A- MEDACINE, B- MEDECINE, C- MEDESINE, D- MEDISINE, E- MEDICINE

45. A- REPEATITION, B- REPETITION, C- REPETETION, D- REPITETION, D- REPITITION

46. A- DEFENETLY, B- DEFENITELY, C- DEFINETELY, D- DEFINITELY, E- DEFINETILY

47. A- OCASIONALY, B- OCASSIONALY, C- OCCASIONALLY, D- OCCASSIONALY, E- OCCASSIONALLY

48. A- EXISTANCE, B- EXISTANSE, C- EXISTENCE, D- EXISTENSE, E- EXISTINCE

49. A- INDEPENDANCE, B- INDEPENDANSE, C- INDEPENDENSE, D- INDEPENDENCE, E- INDEPENDINCE

50. A- ENVIORNMENT, B- ENVIRONMENT, C- ENVIORMENT, D- ENVIRAMENT, E- ENVIORMENT

APPENDIX E SPELLING POST-TEST

(Answer on machine-scoring answer strip.)

1. John (A- two, B- to, C- too) hopes for the team's victory.

2. Which usage is this?
   A- number
   B- direction/preposition, part of an infinitive
   C- also, excessive

3. All the students brought (A- they're, B- their, C- there) notebooks and pens.

4. Which usage?
   A- they are contraction
   B- possessive pronoun
   C- expletive, direction/adverb (where)

5. The committee thought (A- its, B- it's) proposal would be approved.

6. Which usage?
   A- it is contraction
   B- possessive pronoun

7. Bill likes spinach better (A- than, B- then) cabbage.

8. Which usage?
   A- comparison
   B- time (when)

9. Come to see me when (A- your, B- you're) back in town.

10. Which usage?
    A- you are contraction
    B- possessive pronoun

11. Tom didn't make the track team because he is (A- two, B- to, C- too) slow.

12. Which usage?
    A- number
    B- direction/preposition, part of an infinitive
    C- also, excessive

13. She wants (A- two, B- to, C- too) finish that job before noon.

14. Which usage?
    A- number
    B- direction/preposition, part of an infinitive
    C- also, excessive

Appendix E, Spelling Post-test, continued

15. The announcement will be made when (A- its, B- it's) decided.

16. Which usage?
A- it is contraction
B- possessive pronoun

17. The old chair sold for (A- two, B- to, C- too) dollars.

18. Which usage?
A- number
B- direction/preposition, part of an infinitive
C- also, excessive

19. The boys are over (A- they're, B- their, C- there) working.

20. Which usage?
A- they are contraction
B- possessive pronoun
C- expletive, direction/adverb (where)

21. (A- Its, B- It's) raining very heavily.

22. Which usage?
A- it is contraction
B- possessive pronoun

23. Come over for coffee after (A- your, B- you're) performance.

24. Which usage?
A- you are contraction
B- possessive pronoun

25. He'll eat lunch and (A- than, B- then) finish loading the trunk.

26. Which usage?
A- comparison
B- time (when)

27. (A- Two, B- To, C- Too) much TV viewing can hurt your eyes.

28. Which usage?
A- number
B- direction/preposition, part of an infinitive
C- also, excessive

29. His vacation was over all (A- two, B- to, C- too) soon.

30. Which usage?
A- number
B- direction/preposition, part of an infinitive
C- also, excessive

Appendix E, Spelling Post-test, continued

31. Mr. Barton explained the billing system (A- two, B- to, C- too) his new secretary.

32. Which usage?
A- number
B- direction/preposition, part of an infinitive
C- also, excessive

33. When the coffeepot exploded, it shattered (A- its, B- it's) lid.

34. Which usage?
A- it is contraction
B- possessive pronoun

35. Susan gave her copy of the book (A- two, B- to, C- too) Mary.

36. Which usage?
A- number
B- direction/preposition, part of an infinitive
C- also, excessive

37. The price is much (A- two, B- to, C- too) high.

38. Which usage?
A- number
B- direction/preposition, part of an infinitive
C- also, excessive

39. A- OCASIONALY, B- OCASSIONALY, C- OCCASIONALLY, D- OCCASSIONALY, E- OCCASSIONALLY

40. A- SIMALAR, B- SIMILAR, C- SIMALIAR, D- SIMILIAR

41. A- PRIVILEDGE, B- PRIVELEDGE, C- PRIVILEGE, D- PRIVELEGE

42. A- ENVIORNMENT, B- ENVIRONMENT, C- ENVIORMENT, D- ENVIRAMENT, E- ENVIORAMENT

43. A- CATAGORY, B- CATEGORY, C- CATAGARY, D- CATEGARY

44. A- IRRELEVENT, B- IRRELEVANT, C- IRRELAVENT, D- IRREVELANT, E- IRREVELENT

45. A- GRAMAR, B- GRAMER, C- GRAMMAR, D- GRAMMER

46. A- SEPERETE, B- SEPARETE, C- SEPERATE, D- SEPARATE

47. A- MATHEMATICS, B- MATHEMETICS, C- MATHMATICS, D- MATHAMETICS, E- MATHAMATICS

48. A- EXISTANCE, B- EXISTANSE, C- EXISTENCE, D- EXISTENSE, E- EXISTINCE

Appendix E, Spelling Post-test, continued

49. The interest will be 5% of the (A- PRINCIPAL, B- PRINCIPEL, C- PRINCIPLE, D- PRINSIPAL, E- PRINSIPEL).

50. We hope this unit has (A- AFFECTED, B- AFECTED, C- AFACTED, D- EFECTED, E- EFFECTED) your spelling for the better.

ON ITEMS 51.-130., SELECT THE APPLICABLE RULE, THEN THE CORRECT SPELLING.

C A R R Y + S

51. Which rule applies?
A- Root ending consonant-Y + -ING -- keeps Y
B- Root ending consonant-Y + -ES or any other suffix -- changes Y to I
C- Root ending vowel -Y -- keeps Y

52. Correct spelling
A- C A R R Y S
B- C A R R I S
C- C A R R I E S

K E Y + S

53. Which rule applies?
A- Root ending consonant-Y + -ING -- keeps Y
B- Root ending consonant-Y + -ES or any other suffix -- changes Y to I
C- Root ending vowel-Y -- keeps Y

54. Correct spelling
A- K E Y S
B- K E Y E S
C- K E I E S

P A Y + M E N T

55. Which rule applies?
A- Root ending consonant-Y + -ING -- keeps Y
B- Root ending consonant-Y + -ES or any other suffix -- changes Y to I
C- Root ending vowel-Y -- keeps Y

56. Correct spelling
A- P A Y M E N T
B- P A I M E N T
C- P A Y E M E N T

Appendix E, Spelling Post-test, continued

S T U D Y + I N G

57. Which rule applies?
A- Root ending consonant-Y + -ING -- keeps Y
B- Root ending consonant-Y + -ES or any other suffix -- changes Y to I
C- Root ending vowel-Y -- keeps Y

58. Correct spelling
A- S T U D I N G
B- S T U D D I N G
C- S T U D Y I N G
D- S T U D I I N G
E- S T U D E Y I N G

L O N E L Y + N E S S

59. Which rule applies?
A- Root ending consonant-Y + -ING -- keeps Y
B- Root ending consonant-Y + -ES or any other suffix -- changes Y to I
C- Root ending vowel-Y -- keeps Y

60. Correct spelling
A- L O N E L Y N E S S
B- L O N L Y N E S S
C- L O N E L I N E S S
D- L O N L I N E S S
E- L O N E L E N E S S

R O B + E D

61. Which rule applies?
A- Root ending consonant-E + vowel suffix -- drops E
B- Root ending consonant-E + consonant suffix -- keeps E
C- Root ending consonant-vowel-consonant in single syllable + vowel suffix -- doubles final consonant
D- Root ending consonant-vowel-consonant in accented final syllable + vowel suffix -- doubles final consonant
E- None of these suffix rules applies; merely combine the parts.

62. Correct spelling
A- R O B E D
B- R O B B E D

Appendix E, Spelling Post-test, continued

R E P A I R + I N G

63. Which rule applies?
A- Root ending consonant-E + vowel suffix -- drops E
B- Root ending consonant-E + consonant suffix -- keeps E
C- Root ending consonant-vowel-consonant in single syllable + vowel suffix -- doubles final consonant
D- Root ending consonant-vowel-consonant in accented final syllable + vowel suffix -- doubles final consonant
E- None of these suffix rules applies; merely combine the parts.

64. Correct spelling
A- R E P A I R I N G
B- R E P A I R R I N G

M I S + S P E L L

65. Which rule applies?
A- Root ending consonant-E + vowel suffix -- drops E
B- Root ending consonant-E + consonant suffix -- keeps E
C- Root ending consonant-vowel-consonant in single syllable + vowel suffix -- doubles final consonant
D- Root ending consonant-vowel-consonant in accented final syllable + vowel suffix -- doubles final consonant
E- None of these suffix rules applies; merely combine the parts.

66. Correct spelling
A- M I S P E L L
B- M I S S P E L L
C- M I S S S P E L L

C O M E + I N G

67. Which rule applies?
A- Root ending consonant-E + vowel suffix -- drops E
B- Root ending consonant-E + consonant suffix -- keeps E
C- Root ending consonant-vowel-consonant in single syllable + vowel suffix -- doubles final consonant
D- Root ending consonant-vowel-consonant in accented final syllable + vowel suffix -- doubles final consonant
E- None of these suffix rules applies; merely combine the parts.

68. Correct spelling
A- C O M E I N G
B- C O M I N G
C- C O M M I N G

Appendix E, Spelling Post-test, continued

D E V E L O P + E D

69. Which rule applies?
A- Root ending consonant-E + vowel suffix -- drops E
B- Root ending consonant-E + consonant suffix -- keeps E
C- Root ending consonant-vowel-consonant in single syllable + vowel suffix -- doubles final consonant
D- Root ending consonant-vowel-consonant in accented final syllable + vowel suffix -- doubles final consonant
E- None of these suffix rules applies; merely combine the parts.

70. Correct spelling
A- D E V E L O P E D
B- D E V E L O P P E D
C- D E V E L L O P E D
D- D E V E L L O P P E D

R E F E R + A L

71. Which rule applies?
A- Root ending consonant-E + vowel suffix -- drops E
B- Root ending consonant-E + consonant suffix -- keeps E
C- Root ending consonant-vowel-suffix in single syllable + vowel suffix -- doubles final consonant
D- Root ending consonant-vowel-consonant in accented final syllable + vowel suffix -- doubles final consonant
E- None of these suffix rules applies; merely combine the parts.

72. Correct spelling
A- R E F E R A L
B- R E F E R R A L
C- R E F F E R A L
D- R E F F E R R A L

H O P + I N G

73. Which rule applies?
A- Root ending consonant-E + vowel suffix -- drops E
B- Root ending consonant-E + consonant suffix -- keeps E
C- Root ending consonant-vowel-consonant in single syllable + vowel suffix -- doubles final consonant
D- Root ending consonant-vowel-consonant in accented final syllable + vowel suffix — doubles final consonant
E- None of these suffix rules applies; merely combine the parts.

74. Correct spelling
A- H O P I N G
B- H O P E I N G
C- H O P P I N G

Appendix E, Spelling Post-test, continued

F I T + N E S S

75. Which rule applies?
A- Root ending consonant-E + vowel suffix -- drops E
B- Root ending consonant-E + consonant suffix -- keeps E
C- Root ending consonant-vowel-consonant in single syllable + vowel suffix -- doubles final consonant
D- Root ending consonant-vowel-consonant in accented final syllable + vowel suffix -- doubles final consonant
E- None of these suffix rules applies; merely combine the parts.

76. Correct spelling
A- F I T N E S S
B- F I T T N E S S

N I N E + T Y

77. Which rule applies?
A- Root ending consonant-E + vowel suffix -- drops E
B- Root ending consonant-E + consonant suffix -- keeps E
C- Root ending consonant-vowel-consonant in single syllable + vowel suffix -- doubles final consonant
D- Root ending consonant-vowel-consonant in accented final syllable + vowel suffix -- doubles final consonant
E- None of these suffix rules applies; merely combine the parts.

78. Correct spelling
A- N I N T Y
B- N I N N T Y
C- N I N E T Y

R E F E R + E N C E

79. Which rule applies?
A- Root ending consonant-E + vowel suffix -- drops E
B- Root ending consonant-E + consonant suffix -- keeps E
C- Root ending consonant-vowel-consonant in single syllable + vowel suffix -- doubles final consonant
D- Root ending consonant-vowel-consonant in accented final syllable + vowel suffix -- doubles final consonant
E- None of these suffix rules applies; merely combine the parts.

80. Correct spelling
A- R E F E R E N C E
B- R E F F E R E N C E
C- R E F E R R E N C E
D- R E F F E R R E N C E

Appendix E, Spelling Post-test, continued

O C C U R + E N C E

81. Which rule applies?
A- Root ending consonant-E + vowel suffix -- drops E
B- Root ending consonant-E + consonant suffix -- keeps E
C- Root ending consonant-vowel-consonant in single syllable + vowel suffix -- doubles final consonant
D- Root ending consonant-vowel-consonant in accented final syllable + vowel suffix -- doubles final consonant
E- None of these suffix rules applies; merely combine the parts.

82. Correct spelling
A- O C C U R E N C E
B- O C U R R E N C E
C- O C C U R R E N C E

B E G I N + E R

83. Which rule applies?
A- Root ending consonant-E + vowel suffix -- drops E
B- Root ending consonant-E + consonant suffix -- keeps E
C- Root ending consonant-vowel-consonant in single syllable + vowel suffix -- doubles final consonant
D- Root ending consonant-vowel-consonant in accented final syllable + vowel suffix -- doubles final consonant
E- None of these suffix rules applies; merely combine the parts.

84. Correct spelling
A- B E G I N E R
B- B E G G I N E R
C- B E G I N N E R
D- B E G G I N N E R

L O N E + L Y

85. Which rule applies?
A- Root ending consonant-E + vowel suffix -- drops E
B- Root ending consonant-E + consonant suffix -- keeps E
C- Root ending consonant-vowel-consonant in single syllable + vowel suffix -- doubles final consonant
D- Root ending consonant-vowel-consonant in accented final syllable + vowel suffix -- doubles final consonant
E- None of these suffix rules applies; merely combine the parts.

86. Correct spelling
A- L O N L Y
B- L O N N L Y
C- L O N E L Y
D- L O N E L E Y
E- L O N L E Y

Appendix E, Spelling Post-test, continued

D I S + S O L V E

87. Which rule applies?
A- Root ending consonant-E + vowel suffix -- drops E
B- Root ending consonant-E + consonant suffix -- keeps E
C- Root ending consonant-vowel-consonant in single syllable + vowel suffix -- doubles final consonant
D- Root ending consonant-vowel-consonant in accented final syllable + vowel suffix -- doubles final consonant
E- None of these suffix rules applies; merely combine the parts.

88. Correct spelling
A- D I S O L V E
B- D I S S O L V E

O F F E R + I N G

89. Which rule applies?
A- Root ending consonant-E + vowel suffix -- drops E
B- Root ending consonant-E + consonant suffix -- keeps E
C- Root ending consonant-vowel-consonant in single syllable + vowel suffix -- doubles final consonant
D- Root ending consonant-vowel-consonant in accented final syllable + vowel suffix -- doubles final consonant
E- None of these suffix rules applies; merely combine the parts.

90. Correct spelling
A- O F F E R I N G
B- O F F E R R I N G
C- O F E R I N G
D- O F E R R I N G

H O P E + F U L

91. Which rule applies?
A- Root ending consonant-E + vowel suffix -- drops E
B- Root ending consonant-E + consonant suffix -- keeps E
C- Root ending consonant-vowel-consonant in single syllable + vowel suffix -- doubles final consonant
D- Root ending consonant-vowel-consonant in accented final syllable + vowel suffix -- doubles final consonant
E- None of these suffix rules applies; merely combine the parts.

92. Correct spelling
A- H O P E F U L
B- H O P F U L

Appendix E, Spelling Post-test, continued

H O P E + I N G

93. Which rule applies?
A- Root ending consonant-E + vowel suffix -- drops E
B- Root ending consonant-E + consonant suffix -- keeps E
C- Root ending consonant-vowel-consonant in single syllable + vowel suffix -- doubles final consonant
D- Root ending consonant-vowel-consonant in accented final syllable + vowel suffix -- doubles final consonant
E- None of these suffix rules applies; merely combine the parts.

94. Correct spelling
A- H O P E I N G
B- H O P I N G
C- H O P P I N G

G U I D E + A N C E

95. Which rule applies?
A- Root ending consonant-E + vowel suffix -- drops E
B- Root ending consonant-E + consonant suffix -- keeps E
C- Root ending consonant-vowel-consonant in single syllable + vowel suffix -- doubles final consonant
D- Root ending consonant-vowel-consonant in accented final syllable + vowel suffix -- doubles final consonant
E- None of these suffix rules applies; merely combine the parts.

96. Correct spelling
A- G U I D E A N C E
B- G U I D A N C E
C- G U I D E N C E

P R E F E R + E D

97. Which rule applies?
A- Root ending consonant-E + vowel suffix -- drops E
B- Root ending consonant-E + consonant suffix -- keeps E
C- Root ending consonant-vowel-consonant in single syllable + vowel suffix -- doubles final consonant
D- Root ending consonant-vowel-consonant in accented final syllable + vowel suffix -- doubles final consonant
E- None of these suffix rules applies; merely combine the parts.

98. Correct spelling
A- P R E F E R E D
B- P R E F E R R E D
C- P R E F F E R E D
D- P R E F F E R R E D

Appendix E, Spelling Post-test, continued

R E F E R + I N G

99. Which rule applies?
A- Root ending consonant-E + vowel suffix -- drops E
B- Root ending consonant-E + consonant suffix -- keeps E
C- Root ending consonant-vowel-consonant in single syllable + vowel suffix -- doubles final consonant
D- Root ending consonant-vowel-consonant in accented final syllable + vowel suffix -- doubles final consonant
E- None of these suffix rules applies; merely combine the parts.

100. Correct spelling
A- R E F E R I N G
B- R E F E R R I N G
C- R E F F E R I N G
D- R E F F E R R I N G

W R I T E + I N G

101. Which rule applies?
A- Root ending consonant-E + vowel suffix -- drops E
B- Root ending consonant-E + consonant suffix -- keeps E
C- Root ending consonant-vowel-consonant in single syllable + vowel suffix -- doubles final consonant
D- Root ending consonant-vowel-consonant in accented final syllable + vowel suffix -- doubles final consonant
E- None of these suffix rules applies; merely combine the parts.

102. Correct spelling
A- W R I T I N G
B- W R I T E I N G
C- W R I T T I N G

B E C O M E + I N G

103. Which rule applies?
A- Root ending consonant-E + vowel suffix -- drops E
B- Root ending consonant-E + consonant suffix -- keeps E
C- Root ending consonant-vowel-consonant in single syllable + vowel suffix -- doubles final consonant
D- Root ending consonant-vowel-consonant in accented final syllable + vowel suffix -- doubles final consonant
E- None of these suffix rules applies; merely combine the parts.

104. Correct spelling
A- B E C O M I N G
B- B E C O M E I N G
C- B E C O M M I N G
D- B E C O M M E I N G

Appendix E, Spelling Post-test, continued

H -- G H T

105. Which rule applies?
A- If sound is ē, IE except after C.
B- If sound is ē, EI after C.
C- If sound isn't ē, EI except after C.
D- If sound isn't ē, IE after C.
E- Word is exception to EI-IE rule.

106. Correct spelling
A- H E I G H T
B- H I E G H T

T H -- F

107. Which rule applies?
A- If sound is ē, IE except after C.
B- If sound is ē, EI after C.
C- If sound isn't ē, EI except after C.
D- If sound isn't ē, IE after C.
E- Word is exception to EI-IE rule.

108. Correct spelling
A- T H E I F
B- T H I E F

S -- Z E

109. Which rule applies?
A- If sound is ē, IE except after C.
B- If sound is ē, EI after C.
C- If sound isn't ē, EI except after C.
D- If sound isn't ē, IE after C.
E- Word is exception to EI-IE rule.

110. Correct spelling
A- S E I Z E
B- S I E Z E

B E L -- V E

111. Which rule applies?
A- If sound is ē, IE except after C.
B- If sound is ē, EI after C.
C- If sound isn't ē, EI except after C.
D- If sound isn't ē, IE after C.
E- Word is exception to EI-IE rule.

112. Correct spelling
A- B E L E I V E
B- B E L I E V E

Appendix E, Spelling Post-test, continued

R E C -- V E

113. Which rule applies?
A- If sound is ē, IE except after C.
B- If sound is ē, EI after C.
C- If sound isn't ē, EI except after C.
D- If sound isn't ē, IE after C.
E- Word is exception to EI-IE rule.

114. Correct spelling
A- R E C E I V E
B- R E C I E V E

L -- S U R E

115. Which rule applies?
A- If sound is ē, IE except after C.
B- If sound is ē, EI after C.
C- If sound isn't ē, EI except after C.
D- If sound isn't ē, IE after C.
E- Word is exception to EI-IE rule.

116. Correct spelling
A- L E I S U R E
B- L I E S U R E

N -- G H B O R

117. Which rule applies?
A- If sound is ē, IE except after C.
B- If sound is ē, EI after C.
C- If sound isn't ē, EI except after C.
D- If sound isn't ē, IE after C.
E- Word is exception to EI-IE rule.

118. Correct spelling
A- N E I G H B O R
B- N I E G H B O R

C H -- F

119. Which rule applies?
A- If sound is ē, IE except after C.
B- If sound is ē, EI after C.
C- If sound isn't ē, EI except after C.
D- If sound isn't ē, IE after C.
E- Word is exception to EI-IE rule.

120. Correct spelling
A- C H E I F
B- C H I E F

Appendix E, Spelling Post-test, continued

W -- G H

121. Which rule applies?
A- If sound is ē, IE except after C.
B- If sound is ē, EI after C.
C- If sound isn't ē, EI except after C.
D- If sound isn't ē, IE after C.
E- Word is exception to EI-IE rule.

122. Correct spelling
A- W E I G H
B- W I E G H

Y -- L D

123. Which rule applies?
A- If sound is ē, IE except after C.
B- If sound is ē, EI after C.
C- If sound isn't ē, EI except after C.
D- If sound isn't ē, IE after C.
E- Word is exception to EI-IE rule.

124. Correct spelling
A- Y E I L D
B- Y I E L D

C O N C -- T

125. Which rule applies?
A- If sound is ē, IE except after C.
B- If sound is ē, EI after C.
C- If sound isn't ē, EI except after C.
D- If sound isn't ē, IE after C.
E- Word is exception to EI-IE rule.

126. Correct spelling
A- C O N C E I T
B- C O N C I E T

E F F I C -- N T

127. Which rule applies?
A- If sound is ē, IE except after C.
B- If sound is ē, EI after C.
C- If sound isn't ē, EI except after C.
D- If sound isn't ē, IE after C.
E- Word is exception to EI-IE rule.

128. Correct spelling
A- E F F I C E I N T
B- E F F I C I E N T

Appendix E, Spelling Post-test, continued

T H -- R

129. Which rule applies?
A- If sound is $\bar{e}$, IE except after C.
B- If sound is $\bar{e}$, EI after C.
C- If sound isn't $\bar{e}$, EI except after C.
D- If sound isn't $\bar{e}$, IE after C.
E- Word is exception to EI-IE rule.

130. Correct spelling
A- T H E I R
B- T H I E R

ON QUESTIONS 131.-150., APPLY THE APPROPRIATE RULES MENTALLY. THEN SELECT THE CORRECT SPELLING.

131. H U M O R + O U S

A- H U M O R O U S
B- H U M O R R O U S

132. A C C I D E N T + A L + L Y

A- A C C I D E N T L Y
B- A C C I D E N T A L L Y
C- A C C I D E N T A L Y
D- A C C I D E N T T A L L Y
E- A C C I D E N T T A L Y

133. N A I L + I N G

A- N A I L I N G
B- N A I L L I N G

134. C A R R Y + I N G

A- C A R R I N G
B- C A R R I I N G
C- C A R R Y I N G
D- C A R R Y N G

135. F O R G E T + I N G

A- F O R G E T I N G
B- F O R G E T T I N G

136. H A R D + E N

A- H A R D E N
B- H A R D D E N

Appendix E, Spelling Post-test, continued

137. P L A N + I N G

A- P L A N I N G
B- P L A N N I N G

138. E D I T + E D

A- E D I T E D
B- E D I T T E D

139. I N V E N T + O R

A- I N V E N T O R
B- I N V E N T T O R

140. D I S + A P P E A R

A- D I S A P E A R
B- D I S S A P E A R
C- D I S A P P E A R
D- D I S S A P P E A R

141. B E A U T Y + F U L + L Y

A- B E A U T Y F U L L Y
B- B E A U T Y F U L Y
C- B E A U T I F U L L Y
D- B E A U T I F U L Y
E- B E A U T Y F L Y

142. T R Y + I N G

A- T R Y N G
B- T R I N G
C- T R Y I N G
D- T R I I N G

143. T R Y + S

A- T R Y S
B- T R Y E S
C- T R I E S

144. O C C U R + E D

A- O C C U R E D
B- O C C U R R E D
C- O C U R E D
D- O C U R R E D
E- O C C U R D

Appendix E, Spelling Post-test, continued

145. T A P + I N G

A- T A P I N G
B- T A P P I N G

146. B E G I N + I N G

A- B E G I N G
B- B E G I N I N G
C- B E G G I N I N G
D- B E G I N N I N G
E- B E G G I N N I N G

147. W -- R D

A- W E I R D
B- W I E R D

148. C -- L I N G

A- C E I L I N G
B- C I E L I N G

149. C O N S C -- N C E

A- C O N S C E I N C E
B- C O N S C I E N C E

150. F O R -- G N

A- F O R E I G N
B- F O R I E G N

APPENDIX F STATISTICAL COMPUTATIONS

SELF-INSTRUCTIONAL PACKAGE GROUP (N=32)

X		$\bar{X}$		d	d^2
145	-	119.91	=	25.09	629.51
143	-	119.91	=	23.09	533.15
142	-	119.91	=	22.09	487.97
141	-	119.91	=	21.09	444.79
138	-	119.91	=	18.09	327.25
137	-	119.91	=	17.09	292.07
136	-	119.91	=	16.09	258.89
135	-	119.91	=	15.09	227.71
135	-	119.91	=	15.09	227.71
133	-	119.91	=	13.09	171.35
132	-	119.91	=	12.09	146.17
130	-	119.91	=	10.09	101.81
129	-	119.91	=	9.09	82.63
128	-	119.91	=	8.09	65.45
125	-	119.91	=	5.09	25.91
123	-	119.91	=	3.09	9.55
122	-	119.91	=	2.09	4.37
116	-	119.91	=	- 3.91	15.29
116	-	119.91	=	- 3.91	15.29
115	-	119.91	=	- 4.91	24.11
113	-	119.91	=	- 6.91	47.75
110	-	119.91	=	- 9.91	98.21
106	-	119.91	=	-13.91	193.49
106	-	119.91	=	-13.91	193.49
105	-	119.91	=	-14.91	222.31
104	-	119.91	=	-15.91	253.13
102	-	119.91	=	-17.91	320.77
102	-	119.91	=	-17.91	320.77
102	-	119.91	=	-17.91	320.77
93	-	119.91	=	-26.91	724.15
87	-	119.91	=	-32.91	1083.07
86	-	119.91	=	-33.91	1149.89
					9018.78 Σd^2

$$\sqrt{\frac{9018.78}{32}}$$

$$\sqrt{281.84}$$

$$s = 16.79$$

Appendix F, Statistical Computations, continued

CLASSROOM DRILL GROUP (N=23)

X		$\bar{X}$		d	d^2
144	-	118.57	=	25.43	646.68
140	-	118.57	=	21.43	459.24
139	-	118.57	=	20.43	417.38
138	-	118.57	=	19.43	377.52
137	-	118.57	=	18.43	339.66
136	-	118.57	=	17.43	303.80
136	-	118.57	=	17.43	303.80
125	-	118.57	=	6.43	41.34
123	-	118.57	=	4.43	19.62
122	-	118.57	=	3.43	11.76
120	-	118.57	=	1.43	2.04
120	-	118.57	=	1.43	2.04
116	-	118.57	=	- 2.57	6.60
115	-	118.57	=	- 3.57	12.74
113	-	118.57	=	- 5.57	31.02
112	-	118.57	=	- 6.57	43.16
112	-	118.57	=	- 6.57	43.16
108	-	118.57	=	-10.57	111.72
104	-	118.57	=	-14.57	212.28
104	-	118.57	=	-14.57	212.28
101	-	118.57	=	-17.57	308.70
83	-	118.57	=	-35.57	1265.22
80	-	118.57	=	-38.57	1487.64
					6659.40 Σd^2

$$\sqrt{\frac{6659.40}{23}}$$

$$\sqrt{289.54}$$

$$s = 17.02$$

Appendix F, Statistical Computations, continued

T - TEST

SELF-INSTRUCTIONAL PACKAGE GROUP $N = 32$, $\bar{X} = 119.91$, $d^2 = 9018.78$

CLASSROOM DRILL GROUP $N = 23$, $\bar{X} = 118.57$, $d^2 = 6659.40$

$$t = \frac{119.91 - 118.57}{\sqrt{\left(\frac{9018.78 + 6659.40}{32 + 23 - 2}\right)\left(\frac{32 + 23}{32 \times 23}\right)}}$$

$$= \frac{1.34}{\sqrt{\left(\frac{15678.18}{53}\right)\left(\frac{55}{736}\right)}}$$

$$= \frac{1.34}{\sqrt{(295.81)\ (.075)}}$$

$$= \frac{1.34}{\sqrt{22.19}}$$

$$= \frac{1.34}{4.71}$$

$$t = .28450106$$
$$.285$$

APPENDIX G

RAW DATA ON TWO GROUPS

SELF-INSTRUCTIONAL PACKAGE GROUP

	Previous average	Previous absences	Pretest score	Post-test score	% change in spelling	% change in average
LA	80.8	-	46, 92%	142, 95%	+ 3%	+ 2%
RA	51.8	4	27, 54%	102, 68%	+14%	+ 2.3%
AB	64.	-	41, 82%	106, 71%	-11%	+ 1%
ED	82.2	2	46, 92%	122, 81%	-11%	-.2%
BF	46.2	13	33, 66%	132, 88%	+22%	+ 7.9%
SF	89.	1	45, 90%	135, 90%	-	+.1%
PH	74.8	3	39, 78%	105, 70%	- 8%	-.7%
GJ	80.8	1½	37, 74%	125, 83%	+ 9%	+.3%
CJ	84.9	4	34, 68%	115, 77%	+ 9%	- 1.5%
BJ	77.5	2½	39, 78%	128, 85%	+ 6%	+.8%
LM	84.2	5	48, 96%	133, 89%	- 7%	+.7%
TM	71.1	4	37, 74%	102, 68%	- 6%	-.3%
GN	75.5	-	41, 82%	106, 71%	-11%	-.6%
KO	85.5	3	46, 92%	130, 87%	- 5%	+.2%
CP	82.5	1	48, 96%	141, 94%	- 2%	+ 1.6%
KP	90.7	-	48, 96%	145, 97%	+ 1%	+.9%
RR	82.3	-	42, 84%	135, 90%	+ 6%	+ 1.1%
DR	88.3	-	41, 82%	123, 82%	-	- 1.2%
JR	47.7	6	25, 50%	86, 57%	+ 7%	+ 1.3%
SSc	52.8	3	35, 70%	110, 73%	+ 3%	+ 2.9%
CSi	46.8	5	33, 66%	116, 77%	+11%	+ 5.%
CSh	40.3,25.8*	1,1	33, 66%	93, 62%	+ 9%	+4.1%,+5.1%
LS	94.2	1	43, 86%	143, 95%	+ 9%	+.1%
SSm	68.	3	39, 78%	129, 86%	+ 8%	+ 2.6%
SSu	92.4	1	41, 82%	138, 92%	+10%	-.1%
PT	30.3	4½	30, 60%	87, 58%	- 2%	+ 4.%
RW	68.5	6	41, 82%	113, 75%	- 7%	+ 1.2%
FW	83.2	1	49, 98%	136, 91%	- 7%	+ 1.1%
EW	42.6	2	40, 80%	116, 77%	- 3%	+ 6.5%
PW	62.2,53.5*	3,3	37, 74%	104, 69%	- 5%	+1.2%,+2.2%
VW	65.1	1	34, 68%	102, 68%	-	+.5%
JW	89.7	-	45, 90%	137, 91%	+ 1%	+.2%
Means	69.3	2.37 hours	39.47 78.94%	119.91 79.94%	+ 1.16%	+1.55%

* Individuals concurrently enrolled in both English 101 and Communications 131. Such students thus had two previous averages. For each such student, taking the spelling unit and its post-test once affected his average in two courses.

Appendix G, Raw Data on Two Groups, continued

CLASSROOM DRILL GROUP

	Previous average	Previous absences	Pretest score	Post-test score	% change in spelling	% change in average
LC	89.6	-	44, 88%	136, 91%	+ 3%	+ .2%
AC	73.7	-	32, 64%	108, 72%	+ 8%	- .2%
DC	61.,57.*	-	43, 86%	113, 75%	-11%	+2.6%,+2.6%
BD	66.7,64.3*	4	37, 74%	125, 83%	+ 9%	+3.1%,+3.3%
DGo	84.8	1	47, 94%	144, 96%	+ 2%	+1.2%
DGr	75.3	3	43, 86%	137, 91%	+ 5%	+ .2%
JH	78.3	1	39, 78%	122, 81%	+ 3%	+ .5%
SH	68.8	3	41, 82%	120, 80%	- 2%	+1.6%
AH	40.5,26.3*	14	34, 68%	101, 67%	- 1%	+5. %,+5.8%
FH	78.8	3	44, 88%	140, 93%	+ 5%	+2. %
GH	38.8,36.6*	1	29, 58%	80, 53%	- 5%	+2.7%,+2.3%
KJ	73.5	-	37, 74%	115, 77%	+ 3%	+ .4%
YK	76.3	-	41, 82%	138, 92%	+10%	+2.2%
MK	55.6	1	24, 48%	83, 55%	+ 7%	- .1%
JLz	68.5	2	34, 68%	123, 82%	+14%	+1.9%
JLy	82.6	-	44, 88%	139, 93%	+ 5%	+2. %
VM	81.2	-	34, 68%	104, 69%	+ 1%	-1.4%
LM	65.5	-	30, 60%	104, 69%	+ 9%	+ .3%
GN	43.7	4	40, 80%	116, 77%	- 3%	+4.8%
TO	79.3	-	31, 62%	136, 91%	+29%	+1.7%
CR	77.5	5½	35, 70%	112, 75%	+ 5%	- .3%
DR	63.6,55.*	-	30, 60%	120, 80%	+20%	+3.1%,+3.6%
EV	43.3	7	36, 72%	112, 75%	+ 3%	+4.5%
Means	64.5	1.10 hours	36.91 73.82%	118.57 79.04%	+5.17%	+1.99%

* Individuals concurrently enrolled in both English 101 and Communications 131.

APPENDIX H RAW DATA ON TWO GROUPS SUBDIVIDED BY PREVIOUS COURSE AVERAGES INTO FOUR SUBGROUPS

CLASSROOM DRILL GROUP WITH 75+ AVERAGES

	Previous average	Previous absences	Pretest score	Post-test score	% change in sp.	% change in av.	Rules questions missed (pos.59)	Spelling questions missed (pos.91)
LC	89.6	-	44,88%	136,91%	+ 3%	+ .2%	5, 8.5%	9, 9.9%
DGo	84.8	1	47,94%	144,96%	+ 2%	+1.2%	4, 6.8%	2, 2.2%
JLy	82.6	-	44,88%	139,93%	+ 5%	+2. %	5, 8.5%	6, 6.6%
VM	81.2	-	34,68%	104,69%	+ 1%	-1.4	23,39. %	23,25.3%
TO	79.3	-	31,62%	136,91%	+29%	+1.7%	7,11.9%	7, 7.7%
FH	78.8	3	44,88%	140,93%	+ 5%	+2. %	5, 8.5%	5, 5.5%
JH	78.3	1	39,78%	122,81%	+ 3%	+ .5%	14,23.7%	14,15.4%
CR	77.5	5½	35,70%	112,75%	+ 5%	- .3%	16,27.1%	22,24.2%
YK	76.3	-	41,82%	138,92%	+10%	+2.2%	4, 6.8%	8, 8.8%
DGr	75.3	3	43,86%	137,91%	+ 5%	+ .2%	4, 6.8%	9, 9.9%
Means	80.37	1.35	40.2 80.4%	130.8 87.2%	10 up +6.8%	8 up +1.25% 2 down - .85%	8.7 14.7%	10.5 11.5%

APPENDIX H, RAW DATA ON FOUR SUBGROUPS

CLASSROOM DRILL GROUP WITH BELOW-75 AVERAGES

	Previous average	Previous absences	Pretest score	Post-test score	% change in sp.	% change in av.	Rules questions missed (pos.59)	Spelling questions missed (pos.91)
AC	73.7	-	32,64%	108,72%	+ 8%	- .2%	18,30.5%	24,26.4%
KJ	73.5	-	37,74%	115,77%	+ 3%	+ .4%	18,30.5%	17,18.7%
JLz	68.5	2	34,68%	123,82%	+14%	+1.9%	16,27.1%	11,12.1%
BD	66.7,64.3*	4	37,74%	125,83%	+ 9%	+3.1,+3.3	13,22. %	12,13.2%
LMc	65.5	-	30,60%	104,69%	+ 9%	+ .3%	25,42.4%	21,23.1%
DR	63.6,55*	-	30,60%	120,80%	+20%	+3.1,+3.6	8,13.6%	22,24.2%
MK	55.6	1	24,48%	83,55%	+ 7%	- .1%	31,52.5%	36,39.6%
EV	43.3	7	36,72%	112,75%	+ 3%	+4.5%	21,35.6%	17,18.7%
Means	62.97	1.75	32.5 65%	111.25 74.2%	8 up +9.125%	8 up +2.53% 2 down - .15%	18.75 31.8%	20 22%
SH	68.8	3	41,82%	120,80%	- 2%	+1.6%	19,32.2%	11,12.1%
DC	61,57*	-	43,86%	113,75%	-11%	+2.6,+2.6	19,32.2%	18,19.8%
GN	43.7	4	40,80%	116,77%	- 3%	+4.8%	25,42.4%	9, 9.9%
AH	40.5,26.3*	14	34,68%	101,67%	- 1%	+5.,+5.8	27,45.8%	22,24.2%
GH	38.8,36.6*	1	29,58%	80,53%	- 5%	+2.7,+2.3	34,59.3%	36,39.6%
Means	46.59	4.4	37.4 74.8%	106 70.7%	5 down -4.4%	8 up +3.43%	24.8 42.%	19.2 21.1%

* Individuals concurrently enrolled in both English 101 and Communications 131.

APPENDIX H, RAW DATA ON FOUR SUBGROUPS, CONTINUED

SELF-INSTRUCTIONAL PACKAGE GROUP WITH 75+ AVERAGES

	Previous average	Previous absences	Pretest score	Post-test score	% change in sp.	% change in av.	Rules questions missed (pos.59)	Spelling questions missed (pos.91)
LS	94.2	1	43,86%	143,95%	+ 9%	+ .1%	5, 2.2%	2, 2.2%
SS	92.4	1	41,82%	138,92%	+10%	- .1%	2, 3.4%	10,11. %
KP	90.7	-	48,96%	145,97%	+ 1%	+ .9%	1, 1.7%	4, 4.4%
JW	89.7	-	45,90%	137,91%	+ 1%	+ .2%	8,13.6%	5, 5.5%
CJ	84.9	4	34,68%	115,77%	+ 9%	-1.5%	16,27.1%	19,20.9%
RR	82.3	-	42,84%	135,90%	+ 6%	+1.1%	9,15.3%	6, 6.6%
LA	80.8	-	46,92%	142,95%	+ 3%	+2. %	4, 6.8%	4, 4.4%
GJ	80.8	1½	37,74%	125,83%	+ 9%	+ .3%	18,30.5%	7, 7.7%
BJ	77.5	2½	39,78%	128,85%	+ 6%	+ .8%	11,18.6%	11,12.1%
Means	85.92	1.11	41.67 83.34%	134.22 89.5%	2 up + 6%	7 up + .77 2 down - .8	8.22 13.9%	7.55 8.3%
KO	85.5	3	46,92%	130,87%	- 5%	+ .2%	12,20.3%	8, 8.8%
LM	84.2	5	48.96%	133,89%	- 7%	+ .7%	10,16.9%	7, 7.7%
FW	83.2	1	49,98%	136,91%	- 7%	+1.1%	9,15.3%	5, 5.5%
CP	82.5	1	48,96%	141,94%	- 2%	+1.6%	6,10.2%	3, 3.3%
ED	82.2	2	46,92%	122,81%	-11%	- .2%	19,32.2%	9, 9.9%
GN	75.5	-	41,82%	106,71%	-11%	- .6%	17,28.8%	7, 7.7%
Means	82.18	2.	46.33 92.66%	128. 85.3%	6 down -7.17%	4 up +3.6% 2 down - .4%	12.17 20.6%	6.5 7.1%
SF	89.	1	45,90%	135,90%	-	+ .1%	8,13.6%	7, 7.7%
DR	88.3	-	41,82%	123,82%	-	-1.2	8,13.6%	19,20.9%
Means	88.65	.5	43,86%	129,86%	2 same	- .55	8,13.6%	13,14.3%

APPENDIX H, RAW DATA ON FOUR SUBGROUPS, CONTINUED

SELF-INSTRUCTIONAL PACKAGE GROUP WITH BELOW-75 AVERAGES

	Previous average	Previous absences	Pretest score	Post-test score	% change in sp.	% change in av.	Rules questions missed (pos.59)	Spelling questions missed (pos.91)
SSm	68.	3	39,78%	129,86%	+ 8%	+2.6%	11,18.6%	10,11. %
SSc	52.8	3	35,70%	110,73%	+ 3%	+2.9%	18,30.5%	22,24.2%
RA	51.8	4	27,54%	102,68%	+14%	+2.3%	21,35.6%	27,29.7%
JR	47.7	6	25,50%	86,57%	+ 7%	+1.3%	31,52.5%	33,36.3%
CSi	46.8	5	33,66%	116,77%	+11%	+5. %	18,30.5%	16,17.6%
BF	46.2	13	33,66%	132,88%	+22%	+7.9%	9,15.3%	9, 9.9%
Means	54.62	5.67	32,64%	112.5 75%	6 up +10.83%	6 up +3.67%	18,30.5%	19.5 21.4%
PH	74.8	3	39,78%	105,70%	- 8%	- .7%	21,35.6%	24,26.4%
TM	71.1	4	37,74%	102,68%	- 6%	- .3%	25,42.4%	23,25.3%
RW	68.5	6	41,82%	113,75%	- 7%	+1.2%	23,39. %	14,15.4%
AB	64.	-	41,82%	106,71%	-11%	+1. %	28,47.5%	16,17.6%
PW	62.2,53.5*	6	37,74%	104,69%	- 5%	+1.2,+2.2	26,44.1%	20,22. %
EW	42.6	2	40,80%	116,77%	- 3%	+6.5%	18,30.5%	16,17.6%
CSh	40.3,25.8*	2	33,66%	93,62%	- 4%	+4.1,+5.1	28,47.5%	29,31.9%
PT	30.3	4½	30,60%	87,58%	- 2%	+4. %	23,39. %	40,44. %
Means	53.31	3.44	37.25 74.5%	103.25 68.83%	8 down -5.75%	8 up +3.16% 2 down - .5%	24,40.7%	22.75 25%
VW	65.1	1	34,68%	102,68%	- 1 same	+ .5%	24,40.7%	23,25.3%

* Individuals concurrently enrolled in both English 101 and Communications 131.

BIBLIOGRAPHY

Bennett, Robert C., Chairman of Communications Division, El Centro College, Dallas, Texas. Letter included as Appendix A.

Blau, Harold. "First Aid for Extremely Poor Spellers," English Journal, 55:583-584 (May, 1966).

Bloom, Benjamin S., J. T. Hastings, and G. F. Madaus. "Learning for Mastery," Handbook on the Formative and Summative Evaluation of Student Learning. New York: McGraw-Hill, 1971.

Braddock, Richard, Richard Lloyd-Jones, and Lowell Schoer. Research in Written Composition. Champaign, Illinois: National Council of Teachers of English, 1963.

Cambridge Book Company (no author listed). Spelling. New York: Cambridge Book Company, 1971.

Cross, K. Patricia. Accent on Learning. (San Francisco: Jossey-Bass Publishers, 1976.

--------. The Junior College Student: A Research Description. Princeton, New Jersey: Educational Testing Service, 1968.

Geedy, Patricia S. "What Research Tells Us About Spelling," Elementary English, 52:233-236 (February, 1975).

Herd, Ruby H., President, El Centro College, Dallas, Texas. Letter included as Appendix B.

Herrscher, Barton R., Dayton Y. Roberts, and John E. Roueche. Syllabus: Curriculum Development. Fort Lauderdale, Florida: Nova University Press, 1973.

Higgins, John A. "Remedial Students' Needs vs. Emphases in Text-Workbooks," College Composition and Communication, 24:188-192 (May, 1973).

Hinrichs, Ronald W. "An Old but Valid Procedure," Elementary English, 52:249-252 (February, 1975).

Holmes, Mike. "A Spelling Lessen (sic)," English Journal, 64:8-9 (December, 1975).

Horn, Thomas D. The Effect of a Syllabic Presentation of Words Upon Learning to Spell. State University of Iowa, 1947. Quoted by Ronald W. Hinrichs, "An Old but Valid Procedure," Elementary English, 52:251 (February, 1975).

Horne, David, executive editor of Yale Union Press, quoted by Mary Ritchie Key, "The English Spelling System and the ITA," The Elementary School Journal, and by Patricia S. Geedy, "What Research Tells Us About Spelling," Elementary English, 52:234 (February, 1975).

Kelleher, Joan. "Individualized English: New Roles for Teachers and Students," English Journal, 64:29-31 (November, 1975).

Leman, Sandra. "Our Spelling Is a Muess!" College Composition and Communication, 26:211-212 (May, 1975).

Manolakes, George. "The Teaching of Spelling: A Pilot Study," Elementary English, 52:243-247 (February, 1975).

Morrison, Constance. "Individualizing the English Curriculum," English Journal, 64:54-57 (April, 1975).

Pollock, Thomas Clark, and William D. Baker. The University Spelling Book. Englewood Cliffs, New Jersey, 1955. Quoted in John C. Hodges and Mary E. Whitten. Harbrace College Handbook. New York: Harcourt Brace Jovanovich, Inc., 1972.

Pomerantz, Norleen. "Individualized Instruction: Theory and Practice," English Journal, 64:47-79 (November, 1975).

Poteet, G. Howard. "A Brief Note on Spelling," English Journal, 62:1029-1030 (October, 1973).

Roberts, Dayton Young. Preparing a Personalized Instructional Package. Lubbock, Texas: Texas Tech University, (ND).

Rosler, Florence. "Sunrise, Sunset; Pretest, Retest," Elementary English, 52:230-232 (February, 1975).

Roueche, John E., and R. Wade Kirk. Catching Up: Remedial Education, San Francisco: Jossey-Bass Publishers, 1973.

Shaughnessy, Mina P. Errors and Expectations: A Guide for the Teacher of Basic Writing. New York: Oxford University Press, 1977.

Valmont, William J. "Spelling Consciousness: A Long Neglected Area," Education Digest, 38:58-59 (April 1973).

Wallace, John, Robert Klein, and Phillip Schneider. "Spelling Ability and the Probability Texture of English," The Journal of Educational Research, 61:315-319 (March, 1968).

Warren, J. R. Patterns of College Experience, USOE Cooperative Research Project S-327. Claremont: College Student Personnel Institute and Claremont Graduate School and University Center, October, 1966. Quoted by K. Patricia Cross, The Junior College Student: A Research Description. Princeton, New Jersey: Educational Testing Service, 1968.